THE IMPACT STUDY ON TOTAL SANITATION CAMPAIGN IN VIJAYAPURA DISTRICT

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*I hereby declare that this report entitled "**The Impact Study on Total Sanitation Campaign in Vijayapura District**" submitted to University Grants Commission, New Delhi as partial fulfillment of the requirement for successful completion of POST DOCTORATE IN SOCIAL WORK, under the guidance of Prof. S.A.Kazi, Professor (Rtd), Department of Social Work, Karnataka State Akkamahadevi Women's University, Vijayapura.*

I further declare that the results of this research work have not been previously submitted for any other degree, diploma or such other similar titles, of this University or any other Universities in India or abroad.

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ABSTRACT:

Worldwide 2.5 billion people lack improved sanitation facilities and 15 per cent i.e., almost around 1.1 billion inhabitants out of the total population still resort to defecting in open, commonly defined as “defecation in fields, forests, bushes, bodies of water or other open spaces. The United Nations considered the gravity of the situation in its “Millennium Summit” which was held in New York in the year 2000 and thereafter, during its “World Summit on Sustainable Development” which was held in Johannesburg in the year 2002, developed the “Millennium Development Goals” (MDGs) with the vision of eradicating poverty and attaining sustainable development. Initially, the basic goal to be achieved by the year 2015 was to reduce by half the total population having no access to clean drinking water and facilities for sanitation in the baseline year of 1990 but alarming evidence prove otherwise as no significant improvements could be witnessed in general sanitary conditions. Sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage wastewater. Hazards can be physical, microbiological, biological or chemical agents of disease. Wastes that can cause health problems include human and animal faeces, solid wastes, domestic wastewater (sewage, sludge, and grey water), industrial wastes and agricultural wastes. Hygienic means of prevention can be by using engineering solutions (e.g., sewerage and wastewater treatment), simple technologies (e.g. latrines, septic tanks), or even by personal hygiene practices (e.g. simple hand washing with soap). Objective of the Study is to study the profile of the TSC of Vijayapura District; to understand the implementation strategies of TSC in PRI levels; to examine the impact of TSC in rural areas households, Schools and Anganawadi; to motivate communities and Panchayat Raj Institutions promoting sustainable sanitation facilities through awareness. This is an analytical and statistical study. The present study has selected 300 samples with the help of purposive sampling design. The present study used both primary data and secondary data. In this study, data analysis has been done with the help of SPSS software. Out of 300 respondents, a majority 84 % of the respondents are males. 86.7% of the respondents’ family is headed by male member. 74.60% of male members are depended on agriculture and 40.90% of female members of the household are also depended on agriculture. 60.00% of the respondents have not gone to school/ found to be illiterates. Majority 51.70% of the respondents are using

household latrine. Majority 62.70% of the respondents owned toilet. To see the association between independent and dependent variable own latrine chi-square test has been applied. the results shows that the association between educational qualification and status of own latrine is statistically significant. The association between educational qualifications and functioning of the latrine is statistically significant. The association between Occupation of the HH and kind of latrine household is statistically significant. The association between gender and the final decision to build latrine is statistically significant. The association between Education and adults using latrine for defecation in dry season is statistically significant. The association between Education and adults using latrine for defecation in rainy season is statistically significant. The association between Gender and choice of respondents to go to defecate having no latrine is statistically not significant.

Key Words: *Sustainable Development, Sanitation, Hygienic, Panchayat Raj, and Defecation.*

LIST OF ABBREVIATIONS

ASHA	Accredited Social Health Activist
BP	Block Panchayat
CCDU	Communication and Capacity Development Units
CLTS	Community-Let Total Sanitation
CRSP	Centrally Sponsored Rural Sanitation Programme
DDWS	Department of Drinking Water and Sanitation (Government of India)
DLM	District Level Monitor
DWSM	District Water & Sanitation Mission
GoI	Government of India
GP	Gram Panchayat
HRD	Human Resource Development
ICDS	Integrated Child Development Services
IEC	Information, Education, and Communication
IHHL	Individual Household Latrine
MNP	Minimum Needs Programme
MHRD	Ministry of Human Resource Development
MDG	Millennium Development Goal
NGP	Nirmal Gram Puraskar
NGO	Non-governmental Organization
NRHM	National Rural Health Mission
OD	Open Defecation
ODF	Open Defecation free
PRI	Panchayat Raj Institution
RSM	Rural Sanitary Mart
SBM	Swachh Bharat Mission
SHG	Self-help Group
SSHE	School Sanitation & Hygiene Education
SSA	Sarva Shiksha Abhiyan
TSC	Total Sanitation Campaign
UNICEF	United Nations Children's Fund
WSP	Water and Sanitation Program
WHO	World Health Organization
ZP	Zilla Panchayat

CHAPTER – 1

INTRODUCTION

1.1. Overview

1.1.1 Conceptual Framework to Sanitation

1.1.2 Inadequate Sanitation and Transmission of Diseases

1.1.3 Impacts Of Inadequate Sanitation

1.1.4 MDG Goals and Sanitation

1.1.5 Relevance

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1.1. OVERVIEW

Worldwide 2.5 billion people lack improved sanitation facilities and 15 per cent i.e almost around 1.1 billion inhabitants out of the total population still resort to defecting in open, commonly defined as "defecation in fields, forests, bushes, bodies of water or other open spaces[1]." The United Nations considered the gravity of the situation in its "Millennium Summit" which was held in New York in the year 2000[2] and thereafter, during its "World Summit on Sustainable Development" which was held in Johannesburg in the year 2002, developed the "Millennium Development Goals" (MDGs) with the vision of eradicating poverty and attaining sustainable development. Initially, the basic goal to be achieved by the year 2015 was to reduce by half the total population having no access to clean drinking water and facilities for sanitation in the baseline year of 1990 but alarming evidences prove otherwise as no significant improvements could be witnessed in general sanitary conditions. In 2015, only 2.9 billion people made use of a toilet, out of which, 1.9 billion people used private sanitation facilities which were connected to proper sewerage systems and 0.9 billion people used latrines from which excreta was disposed of in situ. However, progress is largely uneven between people of different regions, between inhabitants of rural and urban areas and between rich and poor population. Still, 2.3 billion people were victims of this glorifying problem and 892 million defecated in the open

India had more phone users (around 54 per cent of households) and television access (33 per cent) in rural areas than people with access to tap water (31 per cent) and toilet facilities (31 per cent), according to Census 2011. This clearly indicates the failure of government programmes to change the centuries-old mindset of people who still prefer defecation in the open. This neglect of safe sanitation has had catastrophic outcomes in terms of human well-being. First, despite having much higher levels of per capita incomes on average than in sub-Saharan Africa, India has higher levels of child malnutrition. Second, the high levels of child malnutrition (wasting, stunting, and being underweight) have consequences for the child's learning abilities.

[1] WHO and UNICEF Progress on Drinking-water and Sanitation: 2012 Update, WHO, Geneva and UNICEF, New York,

[2] Millennium Development Goal (MDG) 7, Target 10, aims to "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation."

The result is that India is characterised by high rates of very early drop out in the early years of primary school, which has led to high rates of adult illiteracy (a problem that still afflicts roughly 250 million of the country's population of 1.35 billion in 2019). Open defecation is much more common in India than in other countries where people are poor, literacy rates are low, and drinking water is scarce. Researchers (Spears and Coffey 2019) find that having a simple latrine at home is considered by many to be ritually impure. They also find that open defecation is seen as promoting purity and strength, particularly of male bodies.

Sanitation is not a new concept in India. Since ancient times, importance was attached to cleanliness and, resultantly, there evolved systems of sanitation and drainage. The Indus Valley Civilization is an example. Also, the chapter on administration pronounced by Chanakya, in the "Arthashastra" during the 4th Century BC, contains details on maintaining hygiene and cleanliness. This message has been carried forward from century to century.

The provision of sanitation facility is a prerequisite for human resource development. It also helps to maintain clean environment and has influence on economic development, health and numerous other sectors. Recognizing the importance of sanitation in human development greater public investments have been made to provide sanitation. Noting its importance to ensuring basic human dignity the United Nations General Assembly has declared sanitation as a human right (United Nations, 2010). In this chapter, the researcher tried to present the concept of sanitation, ways and means of transmission of diseases from poor sanitation, impact of inadequate sanitation and improvement of sanitation and MGD goals. The objectives of the study are also mentioned. Preservation of good health is synonymous to and inevitable for survival and progress of human race. Healthy living conditions and good quality health is not only a necessary requirement; it is also a recognized human right for each and every individual. Together, "clean water, sanitation, personal hygiene and good nutrition" are the basic essentials which must be provided to the inhabitants of the developed as also of the developing world. All these factors play a crucial role in reducing disease and enhancing health, and absence of even one factor can certainly

lessen the positive effect of the other factors, still, generally, sanitation is the most neglected.

1.1.1. CONCEPTUAL FRAMEWORK TO SANITATION

Sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage wastewater. Hazards can be physical, microbiological, biological or chemical agents of disease. Wastes that can cause health problems include human and animal faeces, solid wastes, domestic wastewater (sewage, sludge, and grey water), industrial wastes and agricultural wastes. Hygienic means of prevention can be by using engineering solutions (e.g. sewerage and wastewater treatment), simple technologies (e.g. latrines, septic tanks), or even by personal hygiene practices (e.g. simple hand washing with soap).

According to World Health Organization (WHO) sanitation refers to the provision of facilities and services for the safe disposal of human urine and faeces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal. The term sanitation is not limited to latrines alone. The term "*sanitation*" can be applied to a specific aspect, concept, location, or strategy, such as:

- Basic sanitation - refers to the management of human waste at the household level. This terminology is the indicator used to describe the target of the Millennium Development Goal on sanitation.
- On-site sanitation - the collection and treatment of waste is done where it is deposited. Examples are the use of pit latrines, septic tanks, and in hole tanks.
- Food sanitation - refers to the hygienic measures for ensuring food safety.
- Environmental sanitation - the control of environmental factors that form links in disease transmission. Subsets of this category are solid waste management, water and wastewater treatment, industrial waste treatment, noise and pollution control.
- Ecological sanitation - a concept and an approach of recycling to nature the nutrients from human and animal wastes.

1.1.2. INADEQUATE SANITATION AND TRANSMISSION OF DISEASES

Conventionally, most diseases related to poor sanitation have been lumped into the category of "water-borne diseases." Whereas water may be an important medium, the majority of water-related diseases are in fact in the faecal-oral category (Cairn cross, 2003). A considerable body of scientific knowledge has established that diseases caused by poor sanitation and hygiene are viral, bacterial, parasitic, protozoal, helminth, and fungal in nature (Hutton et al., 2008). These diseases can be passed directly, from the infected surface of a latrine, through water or other fluids, person-to-person, by flies, or via soil. Food can also act as an intermediary for all of these direct transmission pathways (Hutton et al., 2008). According to World Health Organisation (WHO) an 'improved' sanitation facility is defined as one that hygienically separates human excreta from human contact, thus minimizing health risks to humans. Inadequate sanitation exposes people to human excreta and causes faecal-oral pathogens through different transmission pathways. Inadequate sanitation means lack of improved facilities (such as; toilets, conveyance, and treatment systems) and hygienic practices (for example, hand washing, proper water handling personal hygiene and so on). One gram of faeces can contain: 10,000,000 viruses, 1,000,000 bacteria, 1,000 parasite cysts and 100 parasite eggs. Thus, inadequate sanitation kills people, causes diseases, environmental pollution, and diminishes welfare (WHO). The fallowing "Faecal oral cycle" describes the principal routes of transmission of infectious diseases.

This cycle is fuelled by the "Five F's": fluid (drinking contaminated water); fields (the contamination of soil and crops with human faecal matter); fingers (unwashed hands preparing food or going into the mouth); food (eating contaminated food); and flies (spreading disease from faeces to food and water or directly to people, particularly problematic where open-air defecation is the norm). Most faecal-oral infections are transmitted on hands and during food preparation, rather than through drinking contaminated water directly. Any action that prevents these organisms from getting to the faeces or from getting onto or into human bodies will help to break the cycle of infection. Adoption of improved sanitation such as hand-washing and use of toilets or latrines that contain and sanitize faecal matter, etc., would break the faecal-oral cycle. The most common health problems associated with poor sanitation are;

Diarrhoea and Dysentery; Typhoid; Bilharzia; Malaria; Cholera; Worms; Eye Infections and Skin Diseases; and increased risk from bacteria, infections and disease for people with reduced immune systems due to HIV/AIDS.

1.1.3. IMPACTS OF INADEQUATE SANITATION

The health impact of inadequate sanitation leads to a number of financial and economic costs including direct medical costs associated with treating sanitation-related illnesses and lost income through reduced or lost productivity and the government costs of providing health services. Additionally, sanitation also leads to time and effort losses due to distant or inadequate sanitation facilities, lower product quality resulting from poor water quality, reduced income from tourism (due to high risk of contamination and disease) and clean-up costs. Increases in female literacy (due to increased school attendance where proper sanitation facilities exist) contribute to economic growth. Every dollar spent on improving sanitation generates economic benefits (about nine times) that far exceed the required sanitation investments. The cost of inaction is enormous. Achieving the MDG for sanitation would result in $66 billion gained through time, productivity, averted illness and death. It is estimated that a 10-year increase in average life expectancy at birth translates into a rise of 0.3-0.4% in economic growth per year.

According to World Bank study the total economic impacts of inadequate sanitation in India amounts to Rs. 2.44 trillion (US$53.8 billion) for the year 2006. This total economic impact is 6.4 per cent of India's GDP in 2006. This means per person annual impact is of Rs. 2,180 (US$48). The following table shows the specific economic impacts of poor sanitation.

Table 1.1 Economic Impact of Inadequate Sanitation, By Subcategories, 2006

Sectors	Subcategories	Amount	
		In Million US$	In Billion Rs
Health	Premature Mortality	29052	1317
	Productivity Loss	4787	217
	Healthcare	4677	212
Water	HH Treatment, Drinking Water	2471	112
	Bottled Water Consumption	132	6
	Piped Water	397	18
	Cost of Fetching Water	1235	56
Access Time	HH Access	10544	478
	School Access	66	3
	Workplace Access	132	6
Tourism	Lost Tourism Earnings	110	5
	International Tourist Illness	154	7

Source: Water and Sanitation Programme, 2011

1.1.4. MGD GOALS AND SANITATION

In the year 2000, the United Nations and the international water community announced explicit goals i.e., the Millennium Development Goals (MDGs for human development over the next several decades. One of these explicitly addressed water by setting the goal of reducing in half the proportion of people unable to reach or afford safe drinking water by 2015. In August 2002 at the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, the international community added a MDG goal of halving by the year 2015 the proportion of people without access to basic sanitation. MDG Goal No. 7 ensures environmental sustainability. It aims at halving the number of people without sustainable access to safe drinking water and safe sanitation by 2015. Improved sanitation also contributes in a number of ways

to achieve the MGD goals. The following picture indicates the contribution of improved sanitation in achieving various MGD goals.

1.1.5. RELEVANCE

The World Health Organization (WHO) finds inadequate sanitation to be a major cause of disease world-wide and improving sanitation as a tool to ensure a significant beneficial impact on health, both in households and across communities. Access to improved sanitation facilities also forms a key part of the United Nations Millennium Development Goals. However, with half of the developing regions in the world without sanitation, the 2015 target appears to be out of reach. Nearly 1.1 billion people around the world practiced open defecation in 2010. Figure 1 reveals that 81 per cent of these people were concentrated in ten countries; 58 per cent in India alone[3].

UNICEF Report 2011 invariably claims that half of the developing regions in the world without sanitation; the 2015 target appears to be out of reach. Nearly 1.1 billion people around the world practiced open defecation in 2010. Presumably, report also emphasize on Millennium Development Goals Report (2010) and observes that sanitation and drinking water are often relatively low priorities for domestic budget allocations and official development assistance, despite the benefits for public health, gender equity, poverty reduction and economic growth. And in many cases, interventions are not targeted to the populations most in need.

India cannot achieve real development if majority of its people live in unhealthy and unclean surroundings due to lack of access to safe water and sanitation. Poor water and sanitation facilities have many other serious repercussions. A direct link exists between water, sanitation and, health and nutrition and human wellbeing. Consumption of contaminated drinking water, improper disposal of human excreta, lack of personal and food hygiene and improper disposal of solid and liquid waste have been major causes of many diseases in India. It is estimated that around 30 million people suffer from water related illnesses. Children, particularly girls and women are the worst affected. Many children, particularly girls, drop out of school and are denied their right to education because they are busy fetching water or are deterred by the lack of separate and decent sanitation facilities in schools. Women often suffer from lack of privacy,

[3]Total sanitation Campaign: Budgeting for Change series, 2011, Social Policy, Planning, Monitoring and Evaluation (SPPME) UNICEF India New Delhi December 2011.

harassment and need to walk large distances to find a suitable place for defecation in the absence of household/ appropriate neighbourhood toilet facilities. Poor farmers and wage earners are less productive due to illness, and national economies suffer. Without safe water and sanitation, sustainable development is impossible[4].

Sanitation is a critical issue as it is linked to both human health and basic dignity of life especially women and young girls. Poor sanitation directly results in not only decline in the quality of life, but also quantity of available water resources and the problem is now fully being treated the greater degree of seriousness than even before. This was highlighted during World Summit on Sustainable Development in Johannesburg in 2002, where the existing Millennium Development Goals (MDGs adopted by the U.N in New York in September 2000) were expanded to include the sanitation target of halving the proportion of people without access to sanitation in 1990 by the year 2015. The low access to sanitation leads to disastrous effects on public health is also causing identical adverse impact on environment.

Sanitation is one of the determinants of quality of life and human development index propounds it is a fundamental health service without which there cannot be any improvement in the state of community health. It is both public and private elements and the individual's hygiene can affect the whole community. Improving the sanitation within a community leads to an improvement in health. Thus sanitation is an integral component of environmental protection which ensures a productive life.

Transmission of all the endemic diseases can be controlled or prevented through good sanitation barriers and sanitary technology for safe human excreta disposal which is nothing but construction and use of sanitary latrine which prevent the access of the pathogens. Disposing of excreta safely, isolating it from flies and other insects and preventing faecal contamination of water supplies would greatly reduce the spread of disease.

Lack of sanitation and unhygienic practices facilitates the transmission of pathogens resulting in many potential diseases. Bacteria , parasites and worm that live in the excrement cause diseases like typhoid, dysenteries, diarrhoea, cholera, ascariasis, hookworm infections, viral hepatitis, poliomyelitis and other intestinal infections and

[4] Evaluation study on Total Sanitation Campaign by Planning Commission of India, May, 2013

parasitic infestation is hold responsible by the inadequate and unsanitary disposal of human excreta. Efforts to improve hygiene and sanitation must aim to reduce transmission of infectious agents.

The quality of life of people can be improved by safe disposal of human excreta. It is the paramount important for health and welfare and also for the social and environmental effect it may have in the community involved. Excreta disposal is an important part of overall environment sanitation. Faecal borne diseases and worm infestations are the main cause of mortality and morbidity where they go for indiscriminate defecation.

Sanitation refers to the provision of facilities and services for the safe disposal of human waste. Basically, we are talking about toilets, or versions of toilets such as latrines. Most developed countries are well equipped with flush toilets; however in developing countries, sanitation is based on much more basic facilities that are often little more than a hole in the ground. Design is not important, as long as the facilities in question dispose of waste in a hygienic way. Billions of people - over one third of the world's population - lack access to sanitation facilities. That is almost twice the number of people living in extreme poverty. Sanitation is also one of the world's leading causes of disease and child death. Although there has been an upward trend in scaling rural sanitation coverage, sanitation suffers from political neglect at every level. There is a sense of shame and stigma attached to the issue that prevents it from being a high profile political issue. Unlike more attractive issues like water, or issues like HIV/AIDS which have overcome their stigma, sanitation still largely a hidden issue[5].

Individual health and hygiene is largely dependent on adequate availability of drinking water and proper sanitation. Therefore, a direct relationship between water, sanitation and health is found. Consumption of unsafe drinking water, improper disposal of human excreta, improper environmental sanitation and lack of personal and food hygiene have been major causes of many diseases in developing countries. India is no exception to this. Prevailing High Infant Mortality Rate is also largely attributed to poor sanitation it was in this context that the Central Rural Sanitation Programme was launched in 1986 primarily with the objective of improving the quality of the rural people and also to provide privacy and dignity to women.

[5]Evaluation study on Total Sanitation Campaign by Planning Commission of India, May, 2013 accessed

The concept of sanitation was earlier limited to disposal of human excreta by cesspools, open ditches, pit latrines, bucket system etc. today it connotes a comprehensive concept, which includes liquid and solid water disposal, food hygiene and personal, domestic as well as environmental hygiene. Proper sanitation is important not only from the general health point of view, but it has a vital role to play in our individual and social life too. Sanitation is one of the basic determinants of quality of life and human development index. Good sanitary practices prevent contamination of water and soil and thereby prevent diseases. The concept of sanitation was, therefore expanded to include personal hygiene, home sanitation, safe water, garbage disposal, excreta disposal and wastewater disposal.

A comprehensive Baseline Survey on Knowledge, Attitudes and Practices in rural water supply and sanitation was conducted during 1996-97 under the aegis of the Indian Institute of Mass Communication, which showed that 55% of those with private latrines were self-motivated. Only 2% the respondents claimed the existence of subsidy as the major motivating factor, while 54% claimed to have gone in for sanitary latrines due to convenience and privacy. The study also showed that 51% of the respondents were willing to spend up to Rs. 1000/- to acquire sanitary toilets.

All these above facts keeping in view, the Central Rural Sanitation Programme was improved. In the new format CRSP moves towards a “Demand driven” approach. The revised approach in the Programme titled “Total Sanitation Campaign” emphasized more on Information, Education and Communication (IEC), Human Resource Development, Capacity Development activities to increase awareness among the rural people and generation of demand for sanitary facilities. This will also enhance people’s capacity to choose appropriate options through alternate delivery mechanisms as per their economic condition. The programme is being implemented with focus on community led and people centred initiatives. Children play an effective role in absorbing and popularizing new ideas and concepts. Therefore, this programme intends to tap their potential as the most persuasive advocates of good sanitation practices in their own households and in schools. The aim is also to provide separate urinals/toilets for boys and girls in all the schools/ Anganawadi in rural areas in the country.

1.2. THE CONCEPT OF TOTAL SANITATION CAMPAIGN

The rural sanitation programme in India was introduced in the year 1954 as a part of the First Five Year Plan of the Government of India. The 1981 Census revealed rural sanitation coverage was only 1%. The International Decade for Drinking water and Sanitation during 1981-90, began giving emphasis on rural sanitation. Government of India introduced the Central Rural Sanitation Programme (CRSP) in 1986 primarily with the objective of improving the quality of life of the rural people and also to provide privacy and dignity to women[6]. After the failure of CSRP, India propagated the "Total Sanitation Campaign" in April 1999. Instead of providing subsidies to the poor strata, the campaign focused on propagating a community-led and people-centered program with the main objective of achieving the status of open defecation free country by the year 2012 i.e. much before the deadline set out under the "Millennium Development Goals." So as to attain this status, the campaign focused on building toilets in homes as well as educational institutions. The 1999 campaign propagated the idea of "demand driven approach" and obligated the public authorities to generate awareness amongst the masses. The sole idea behind this change of approach was the inculcation of change in behaviour and response. This revised approach on sanitation emphasised information, education and communication (IEC) and capacity development activities to increase awareness among rural people. To strengthen the campaign, a new incentive was put in place known as the 'Nirmal Gram Puraskar (NGP)' in 2003[7]. The NGP title was given to those villages, which have become fully free of open defecation (ODF). This award increased competition among rural local bodies to hasten toilet construction (Mehrotra 2016). However, despite these efforts, in the Census 2001, access to toilets was still only 20% compared to 10% in the Census 1991. Financial incentives were provided to Below Poverty Line (BPL) households for construction and usage of individual household latrines (IHHL) in recognition of their achievements.

In the new format CRSP moves towards a "demand driven" approach. The revised approach of "Total Sanitation Campaign" emphasized more on Information,

[6]Accessed Total Sanitation Campaign (TSC): Public Health Engineering Department (megphed.gov.in)
[7]The flagship idea of giving away the "Nirmal Gram Puraskar‟ or "National Clean Village Award‟ was paved in the year 2003. The award has set out certain benchmark which must be accomplished before being eligible for its consideration. It requires that the twin principles of accessibility and availability should be met along with quality and hygiene control (7th World Water Forum 2015)

Education and Communication (IEC), Human Resource Development, Capacity Development activities to increase awareness among the rural people and generation of demand for sanitary facilities. This has indeed enhanced people's capacity to choose appropriate options through alternate delivery mechanisms as per their economic condition. The programme implemented with focus on community led and people centred initiatives. Subsequently, children play an effective role in absorbing and popularizing new ideas and concepts. Hence, this programme intends to tap their potential as the most persuasive advocates of good sanitation practices in their own households and in schools. The aim is also to provide separate urinals/toilets for boys and girls in all the schools/ Anganawadi in rural areas in the country.

1.2.1. Towards Nirmal Bharat: THE TOTAL SANITATION CAMPAIGN

The study conducted by India Water Portal (2014) "A decade of the Total Sanitation Campaign - Rapid assessment of processes and outcomes: A report by the Water and Sanitation Program 2011" summarizes and bring it to the attention of TSC and emphasis that the need for proper sanitation stems from the fact that every day in India an estimated 1,000 children below five years of age die because of diarrhoea. An illness caused by lack of sanitation reduces productivity and depletes resources of families. Women and the girls face a lot of problems because of a lack of sanitation and there is a correlation between toilets in schools and continued education.

It was only in the 6th five year plan that rural sanitation finally found mention. Further the central government moved the responsibility for rural sanitation from Central Public Health and Environmental Engineering Organisation to the Rural Development Department. The initial programme for rural sanitation was top down; the Central Rural Sanitation Programme (CRSP) had a narrow view of sanitation which was focused on construction of toilets and depended on one technology. There was no effort at social re-engineering. Thus even though more than Rs. 660 crore was spent, and 90 lakh latrines constructed rural sanitation grew at 1% throughout the 90's. Thus, there was a rethink which lead to a new campaign which was not only demand oriented but was also based on the understanding that construction of toilets does not result in sanitation. The campaign fed off from the desire of the entire community to adopt safe sanitation and therefore the devolution of powers to the local bodies. This approach was reinforced by the institution of the Nirmal Gram Puraskar. It has been found that there

has been an increase in the level of acceptance of sanitation in rural India. Sanitation coverage has increased from 22% in 2001 to 65% in 2010.

1.2.2. A Decade of TSC: Progress and Status

It was found that the average allocation for the total sanitation campaign in the districts was Rs. 30 crores. Arunachal Pradesh had the lowest allocation Rs. 4 crores while Andhra Pradesh had the highest at Rs. 73 crores. It was found that more was spent in the hardware component of the programme. Data is also provided on such expenditure for households and schools in each state through tables and graphs. The average school toilet expenditure is Rs. 17,320/-. Coverage of school sanitation under TSC in each state is provided through a graph. Also, there are comparisons between sanitation coverage in schools and households.

It was found that most states gave equal importance to BPL households and APL households in providing sanitation. However, nationally BPL households were given higher priority[8].

1.2.3. OBJECTIVES:

The main objectives of the Total Sanitation Campaign are as under:

1) Bring about an improvement in the general quality of life in the rural areas.
2) Accelerate sanitation coverage in rural areas to access to toilets to all by 2017.
3) Motivate communities and Panchayat Raj Institutions promoting sustainable sanitation facilities through awareness creation and health education.
4) In rural areas, cover Schools and Anganawadi by March 2013, with sanitation facilities and promote hygiene education and sanitary habits among students.
5) Encourage cost effective and appropriate technologies for ecologically safe and sustainable sanitation.
6) Develop community managed environmental sanitation systems focusing on solid and liquid waste management.

[8]Report of A decade of the Total Sanitation Campaign - Rapid assessment of processes and outcomes: A report by the Water and Sanitation Program 2011- India water portal (2014)

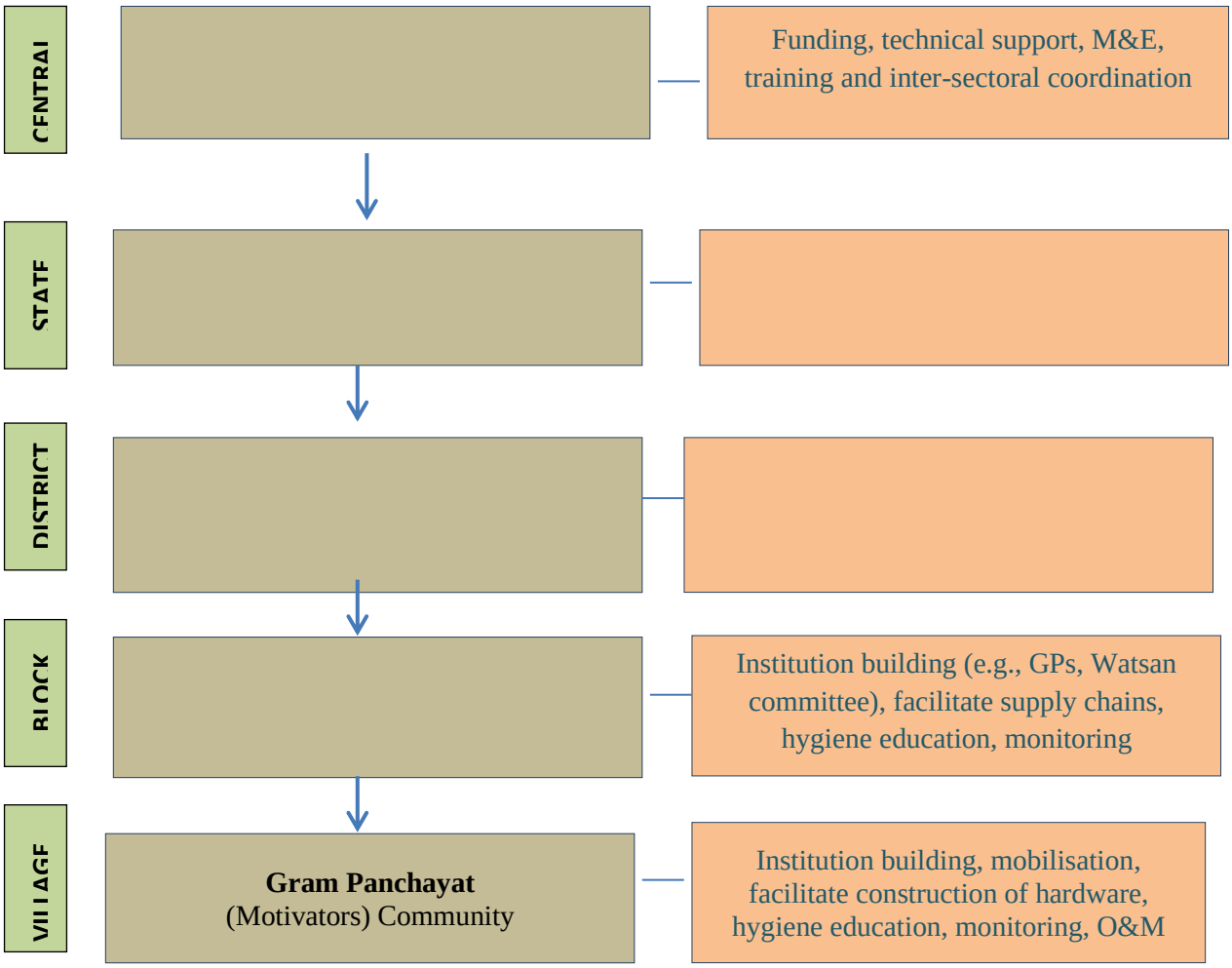
1.2.4. STRATEGY:

The strategy is to make the programme ‘community led’ and ‘people cantered’. A “demand driven approach” is to be adopted with increased emphasis on awareness creation and demand generation for sanitary facilities in houses, schools and for cleaner environment. Alternate delivery mechanisms would be adopted to meet the community needs. Subsidy for individual household latrine units has been replaced by incentive to the poorest of the poor households. Rural school Sanitation is a major component and an entry point for wider acceptance of sanitation by the rural people Technology improvisations to meet the customer preferences and location specific intensive IEC Campaign involving Panchayat Raj Institution, Cooperatives, Women Groups, Self Help Groups, NGOs etc are also important components of the Strategy. The strategy addresses all sections of rural population to bring about the relevant behavioural changes for improved sanitation and hygiene practice and meet their sanitary hardware requirements in an affordable and accessible manner by offering a wide range of technological choices.

1.2.5. TSC DELIVERY STRUCTURE:

The TSC delivery structure perhaps envisaged and delineated. The TSC operates through district project of three to five years duration, jointly financed by central and state governments with contribution from beneficiary households (generally in the ratio 65:25:15). At the district level, Zilla Panchayat holds the responsibility to lead and implement the TSC and similarly at the block level and thereon at the Grama Panchayat level. The coordination of structural functionality from top to bottom and bottom to top approach has been driven factor anticipated in implementing the TSC project effectively. To substantiate the above, figure 1.1 presented below leads the structure framework of TSC.

Figure 1.1: TSC Delivery Structure


CENTRAL
STATE
DISTRICT
BLOCK
VILLAGE
Funding, technical support, M&E, training and inter-sectoral coordination
Institution building (e.g., GPs, Watsan committee), facilitate supply chains, hygiene education, monitoring
Gram Panchayat
(Motivators) Community
Institution building, mobilisation, facilitate construction of hardware, hygiene education, monitoring, O&M

M&E: Monitoring and Evaluation; O&M: Operation and Maintenance

1.2.6. COMPONENTS OF TOTAL SANITATION CAMPAIGN:

The programme components and activities for Total Sanitation Campaign are as follows:

a) Start- Up Activities:

The start -up activities include conducting of preliminary survey to assess the status of sanitation and hygiene practice, people's attitude and demand for improved sanitation etc. with the aim to prepare the District TSC project proposals for seeking Government of India assistance. The start -up activities will also include conducting Baseline Survey (BLS), preparation of Project Implementation Plan (PIP), initial orientation and training of key programme manager at the district level. The cost of

Start-up activities will be met fully by the Government of India assistance and should not exceed 5 percent total project.

b) IEC Activities:

1. Information, Education and Communication (IEC) are important components of the Programme. These intend to create demand for sanitary facilities in the rural areas for household, Schools, Anganwadis, Balwadies and Community Sanitary Complexes. The activities carried out under these components should be area specific and should also involve all sections of the rural population, in a manner, where willingness of the people to construct latrines is generated. Information, Education and Communication is not a one-time activity. IEC strategy and plan have to be implemented not just to create demand but also for use, maintenance and up gradation, so that sanitation and hygiene become an integral part of rural life and thereby sustainable.

2. Community and culture specific plans may be necessary to achieve 100 percent coverage. A national communication strategy and plan has been developed by Government of India giving emphasis on inter personal communication at the grassroots level. As part of this strategy motivators' can be engaged at the village level for demand creation and taking up behaviour change communication. The motivator can be given suitable incentive form the funds earmarked for IEC. The incentive will be performance based i.ein terms of motivating the number of households and schools/Anganwadis to construct latrines and soakage pits and also use the same subsequently. The IEC should also focus on health and hygiene practices and environmental sanitation aspects.

3. Under IEC, mass media campaign should be taken up only at the national and state level and not at the district level. At district level focus should be on inter-personal communication, use of folk medial and also outdoor media like wall painting, hoarding etc. IEC funding will be in the ratio of 80:20 between Government of India and State Governments and the total IEC cost including start up grant will be limited to 15% of the total project cost.

4. Each project district should prepare a detailed IEC Annual Action Plan by February of the preceding financial year with defined strategies to reach all

section of the community. The aim of such a communication plan is to motivate rural people to adopt hygiene behaviour as a way of life and thereby develop and maintain all facilities created under the programme. The Annual IEC Action Plan should be duly approved by the District Panchayat (or the DWSM where such bodies are not in existence). The Communication and Capacity Development Units (CCDUs) set up at the state level must support the districts developing a good IEC plan and also in implementing it. Observance of Sanitation Week/Sanitation Fortnight should be essential component of the Annual Action Plan.

5. For effective dissemination of the IEC material, funds may also be provided under this component to blocks and gram panchayats for execution of works. They may take up such activities like engaging local NGOs for interpersonal communication; selecting motivators, executing works like wall paintings, street plays etc. the development of such material executed by the panchayats may be standardized by the district or the CCDU.

6. Funds available under IEC may be used for imparting hygiene education to the rural communities. General public, as well as children in schools. The IEC plan should include a component for raising awareness among school going children, teachers and PTAs. It can also include training programme for masons, Self Help Groups etc, for activities related to sanitation, such as production of sanitary plan, sanitary napkins etc.

7. The Department has also separately issued IEC Guidelines 2010

c) Rural Sanitary Marts and Production Centers:

The Rural Sanitary Mart is a outlet dealing with the materials, hardware and designs required for the construction of not only sanitary latrines but also other sanitary facilities, such as soakage and compost pits, vermin-composting, washing platforms, certified domestic water filters and other sanitation and hygiene accessories required for individuals, families and the environment in the rural area. Rural Sanitary Mart should necessarily have those items, which are required as a part of the sanitation package. It is a commercial venture with a social objective. The main aim of have a RSM is to provide materials, services and guidance needed for constructing different types of

latrines and other sanitary facilities, which are technologically and financially suitable to the area. Production Centers are the means to improve production of cost effective affordable sanitary materials. The Production Centers/Rural Sanitary Marts could be opened and operated by NGOs/SHGs/Women Organizations/Panchayats etc. Support of private entrepreneurs may also be taken for ensuring an effective supply chain.

Sufficient RSMs may be established with Production Centers or otherwise. Depending upon its function, the District Water and Sanitation Committee will decide the amount of revolving fund upto a maximum of Rs. 3.5 lakhs. Rural Sanitary Marts who decide not to run production centers may procure good quality pans with rural specification from suppliers through competitive bidding. They should ensure that a variety of pans (ceramic, mosaic, HDP, fibre glass) are available for choice. To meet the needs of remote and difficult area, mini- RSMs are permissible, run by CBOs/Women SHGs/Co-operatives. For this purpose, less than 5 percent (subject to a maximum of Rs. 35.00 lakh) of the total Government outlay has been earmarked. Funding for this component will be in the ratio of 80-20 between Government of India and State Government. Further under the Total Sanitation Campaign project, maximum amount of Rs. 3.5 lakh per Rural Sanitary Mart/Production Centre can be provided. The fund may be provided to the NGOs/Panchayats/other agencies for setting up of fund. After RSM/Production Center attains a level of sustainability, the revolving fund should be refunded to the District Implementing Agency. The District Implementing agency should identify key training institution/Resource persons to train the Mart/Production Center Managers, after ascertain their training needs. They should also have a Memorandum of Understanding with the RSMs/PCs and a system of joint monitoring evolved to ensure that the RSMs and PCs are on track with production plans and production targets are able to respond to local requirements, have a method of quality certification of its products and a band of trained masons and motivators. They should demonstrate success as an enterprise and function in accordance with the objectives of the programme.

d) Provision of Revolving Fund in the District:

Based on the successful initiative taken by Self Help Groups and Dairy Cooperative Societies in arranging low/zero interest finance to their members for toilet construction in many parts of the country, a sum of upto Rs. 50 Lakhs, subject to the

restriction of 5% earmarked for alternate delivery mechanism (with includes the cost for setting up RSMs and PCs) may be given to each TSC project as revolving fund. This revolving fund may be further given by the Project Implementing Agency to Cooperative Societies or Self Help Groups whose creditworthiness is established, for providing cheap finance to their members. Loan from this fund should be recovered in 12-18 instalments. District TSC projects will have the flexibility to decide the other terms and conditions for sanction of the revolving fund. This revolving fund can be accessed by APL households also. Loan can also be given to the owner of the household where ICDS center is located for construction of child friendly toilet for ICDS provided the ICDS authorities agree to refund the loan from the rent paid to the house owner.

e) Construction of Individual Household Latrines:

A duly completed household sanitary latrine shall comprise of a Basic Low Cost Unit with a super structure. The programme is aimed to cover all the rural families. Incentive as provided under the scheme may be extended Below Poverty Line (BPL) families, if the same is considered necessary for full involvement of the community. The construction of household toilets should be undertaken by the BPL household itself and on completion and use of the toilet by the BPL household, the cash incentive can be given to the BPL household in recognition of its achievement.

The incentive amount to Below Poverty Line (BPL) household for construction of one unit of IHHL shall be 3200.00 (3700.00 for difficult and hilly areas). The central share out of this shall be 2200.00 (2700.00 in case of hilly and difficult area) and State Government share shall be 1000.00. Minimum beneficiary share shall be 300.00. State Governments are allowed the flexibility to provide higher incentive for household toilet, of the same or higher units costs from their own expense. All houses constructed for BPL families under Indira Awas Yojana shall invariably be provided with a toilet under TSC for that district.

It is assumed that APL families, through motivation, will take up construction of the house hold latrines on their own. The IEC activities, will, however, cover all the families in the district, without exceptions. APL families facing cash crunch may access the revolving fund as outlined in the guidelines earlier. Construction of bucket latrines is not permitted in the rural areas. The existing bucket latrines, if any, should be

converted to sanitary latrines and the unit cost and sharing pattern shall be identical to that of construction of individual household latrines.

f) Community Sanitary Complex:

Community Sanitary Complex is an important component of the TSC. These Complexes, comprising an appropriate number of toilet seats, bathing cubicles, washing platforms, Wash basins etc, can be set up in a place in the village acceptable to women/men/landless families and accessible to them. The maintenance of such complexes is very essential for which Gram Panchayat should own the ultimate responsibility or make alternative arrangements at the village level. User families may be asked to constitute a reasonable monthly user charge for cleaning and maintenance. Maximum unit cost prescribed for a community complex is upto Rs. 2 Lakh. However, it will be approved by the National Scheme Sanctioning Committee based on the detailed design and estimates. Sharing pattern amongst Central Government, State Government and the community is in the ratio of 60:30:10. The community contribution, however, can be made by the Panchayat out of its own resources, from grants of the Twelfth/Thirteenth Finance Commission or from any other fund of the State duly permitted by it. However, total expenditure proposed on Community Sanitary Complex and Individual Household Toilets should be within the ceiling of 60 percent of the total Project outlay. Ordinarily such complexes should be constructed only when there is lack of space in the village for construction of household toilets and the community owns up the responsibility of their operation and maintenance. the ultimate aim is to ensue construction of maximum IHHLs and construction of community complexes will be restricted to only when IHHLs cannot be constructed, for whatever reason and also teach the community of “Hygiene practice”. Such complexes can also be made at public places, markets etc., where large scale congregation of people takes place.

g) Institutional Toilets:

Children are more receptive to new ideas and schools/Anganwadis are appropriate institutions for changing the behaviour, mindset and habits of children from open defecation to the use of lavatory through motivation and education. The experience gained by children through use of toilets in school and sanitation education imparted by teachers would reach home and would also influence parents to adopt good

sanitary habits. School Sanitation, therefore, forms an integral part of every TSC Project.

h) School Toilets:

Toilets in all types of Government Schools i.e., Primary, Upper Primary, Secondary and Higher Secondary and Anganwadis should be constructed. Emphasis should be given on toilets for Girls in Schools.

Funding for School Sanitation in a TSC Project is provided by Central and State Government in the ration of 70:30. Accordingly the Central assistance per unit will be restricted to 70 percent for a unit cost of Rs. 35.000/- (Rs. 38,500 in case of hilly and difficult areas). Separate toilets for girls and boys should be provided in all co-educational schools, which are to be treated as two separate units and each units is entitled to Central assistance. The number of toilet units to be constructed should be adequate to meet the requirements of the school as per the strength of the students attending the school. State/UT Governments, Parents-Teachers Association and Panchayats are free to contribute from their own resources over and above the prescribed amount.

School toilet designs should be developed reviewed and standardized to address quality and cost concerns and more importantly to comply with benchmarks set for “child friendliness”, “gender responsiveness” and to provide access opportunities to children with special needs (children with disabilities). In addition to creation of hardware in the schools, it is essential that hygiene education is imparted to the children on all aspects of hygiene. For this purpose, at least one teacher in each school must be trained in hygiene education who in turn should train the children through interesting activities and community projects that emphasize hygiene behaviour. The expenditure for this purpose can be met from the IEC fund earmarked for the project. The district and panchayat implementing agencies should ensure good coordination with Department of Education and Health and other partners in order to fulfil the objective of School Sanitation and Health Education i.e. to provide a safe, healthy learning environment to all children.

i) Anganwadi Toilets:

In order to change the behaviour of the children from very early stage in life, it is essential that Anganwadis are used as a platform of behaviour change of the children's as well as the mothers attending the Anganwadis. For this purpose each Anganwadi should be provided with a baby friendly toilet. One toilet of unit cost up to Rs. 8,000 to 10,000 (Rs. 10,000 in case of hilly and difficult areas) can be constructed for each Anganwadi or Balwadi in the rural areas where incentive to be given by Government of India will be restricted to Rs. 5,600 (Rs.7,000 in case of hilly and difficult areas). Additional expenses can be met by the State Government, Panchayats or funds from Twelfth/Thirteenth Finance Commission, MPLADS, MLALADS etc. Since there are a large number of Anganwadis operating from private houses, following strategy may be adopted;

a) In all the Anganwadis, which are in Government buildings, baby friendly toilets should be constructed from out of the TSC funds to the extent laid down.

b) Those Anganwadis, which are in private buildings, the owner must be asked to construct the toilet as per design and he/she may be allowed to charge enhanced rent for the building to recover the cost of construction. Alternatively the toilet may be constructed from revolving fund component under the TSC and suitable deductions made from the monthly rental paid to the owner to recover the cost over a period of time.

c) For new buildings, which are going to be hired for Anganwadis, buildings having baby friendly toilet facility only should be hired.

j) Ecological Sanitation:

Under conventional systems of sanitation large quantities of treated water that is even suitable for drinking is applied for flushing and carriage of waste. Significant energy is also consumed for treating waste water. Ever increasing demand of water and lack of waste water disposal systems in rural areas may lead to contamination of ground water sources where the water table is high. Pathogens present in the human excreta also get mixed with water causing the spread of diseases in people. As a result, supply of safe drinking water becomes more expensive.

Human excreta and urine are very rich sources of nutrients and can be used as fertilizer. This concept can be promoted for use of composted human excreta and urine as organic fertilizer for kitchen garden and agricultural operations. The human excreta compost enriches the nutrient content of soil and also improves productivity. Also urine has a good fertilizer value and contains good quantities of macronutrients for plant growth.

The ecological sanitation structure consists of specially designed toilet seat to separate urine and faeces at source. The urine is collected in a container while a faeces is deposited into a closed chamber under the toilet seat. Generally, twin chambers are constructed above the ground level. A hand full of dry soil/ash/sawdust is applied after defecation as dehydrating material to enhance composting. The second chamber is used after the first chamber is full.

Eco-Sanitation structures that allow storage of human excreta and urine for composting or converting to usable and safe manure or fertilizer can be taken up under Total Sanitation Campaign. It should however be ensured that it does not involve the practice of manually cleaning and removing human excreta and is not is contravention of any existing provisions of law. Further, the structure should be so located that it does not lead to contamination of existing water bodies, water table below ground, rain water or other water streams.

The concept of waterless urinals can also be promoted particularly for institutional toilet complexes to save precious fresh water.

Such concepts should be promoted along with existing traditional approaches incorporating necessary modifications in consultation with community.

k) Solid and Liquid Waste Management:

One of the objectives of Total Sanitation Campaign is bring about an improvement in the general quality of life in rural area. This objective cannot be met if the general cleanliness of villages is not maintained properly. Panchayati Raj Institutions (PRIs) are required to put in place mechanisms for garbage collection and disposal and for preventing water logging. Upto 10% of the project cost can be utilized for meeting capital costs incurred under this component. The fund sharing pattern between the Centre, State and Panchayat/Community would be in the ratio of 60:20:20.

Under this component activities like common compost pits, low cost drainage, soakage channels/pits, reuse of waste water, system for collection segregation and disposal of household garbage etc may be taken up. Successful models may be further replicated dovetailing funds from other Rural Development programmes. NGO cooperation may be sought to develop/ test/document/replicate such models.

UNICEF report (2011) reiterates on the TSC that for better understand the concerns with regard to the implementation of the programme, it is useful to identify the principal actors involved. As per the 73rd Amendment Act, 1992 – through which powers and responsibilities were devolved to the Panchayati Raj Institutions – sanitation is included in the 11th Schedule of the Constitution and is the responsibility of the Panchayats. At the district level, the Zilla Panchayat implements the project. Similarly, at the block and village levels, the Panchayat Samiti and Gram Panchayats are involved in implementation of the Total Sanitation Campaign. Gram Panchayats play a pivotal role in implementation along with Non-Governmental Organisations (NGOs) to mobilise people for construction of toilets and maintenance of a clean environment by way of safe disposal of waste. They also have the primary responsibility to operate and maintain common facilities constructed. Panchayats can contribute from their own resources for school and Anganwadi Centre's sanitation facilities, apart from opening and operating the Production Centres and Rural Sanitary Marts.

Non-Governmental Organizations primarily undertake Information, Education and Communication activities as well as help in setting up Production Centres or Rural Sanitary Marts. Their services are required not only for bringing about awareness among the rural people on the need for sanitation but also for ensuring that people actually make use of the sanitation facilities. NGOs can also open and operate Production Centres and Rural Sanitary Marts on the condition that they only undertake sanitation related activities and do not branch out into other sectors like education or health.

1.2.7. THE PRESENT SCENARIO:

But a recent joint monitoring programme (JMP) on water, sanitation and hygiene by the World Health Organization and UNICEF released July 1, 2021 stated that at least 15 per cent of the total population in India defecates in the open. One per cent of the urban and 22 per cent of rural population practises open defecation in the country.

Besides open defecation, the Joint Monitoring Report also emphasised universal access to water, sanitation and hygiene (WASH) to achieve the United Nations-mandated **Sustainable Development Goal (SDG)** 6 in achieving universal access to basic water, sanitation and hygiene services.

India was responsible for the largest drop in open defecation since 2015, in terms of absolute numbers, according to a new Joint Monitoring Programme Report on water, sanitation and hygiene by the World Health Organization and **UNICEF** July 1, 2021.

Within India, open defecation had been highly variable regionally since at least 2006, the report said. In 2006, the third round of the National Family Health Survey (NFHS) found open defecation to be practiced by less than 10 per cent of the population in four states and the Union Territory of Delhi, but by more than half the population in 11 states.

The report Drinking Water, Sanitation, Hygiene and Housing Condition in India *gives* a fair glimpse of ground reality after the much-acclaimed Swachha Bharat Mission (SBM) completed its five years on October 2, 2019. While it shows significant progress in the last six years (access to toilets increased from 2012 to 2018), it also says, "Around 29 per cent of rural population still lack access to toilets."

1.3. RURAL SANITATION IN INDIA:

Since the launch of the TSC, the programme guidelines have been modified twice, once in 2004 and again in December 2007. In 2004, the revision in TSC guidelines followed a mid-term review of the programme. The revision led to a focus on sanitary arrangements, not merely on the construction of household toilets. The School Sanitation and Hygiene Education (SSHE) component was strengthened; and the provision of toilets was extended to Anganwadi Centres (AWCs), all levels of schools (primary, middle, secondary, etc.) and all establishments of the GP. The Government of India sought to re-orient the focus of the sanitation programme to achieving the outcome of an open defecation free (ODF) environment. Thus, not only individual households but also communities, villages, and Panchayat governments started to be targeted

1.3.1. NATION-WIDE SANITATION PROGRAMMES IN PAST:

According to the Census, the rural sanitation coverage in India was only 1% in 1981. The first nationwide programme with a focus on sanitation was the Central Rural Sanitation Programme (CRSP), which was started in 1986 to provide sanitation facilities in rural areas. Later, in 1999, CRSP was restructured and launched as the Total Sanitation Campaign (TSC). While CRSP was a supply-driven infrastructure-oriented programme based on subsidy, TSC was a demand-driven, community-led, project-based programme organized around the district as the unit.

On October 2, 2014, the Swachha Bharat Mission was launched with two components: Swachha Bharat Mission (Gramin) and Swachha Bharat Mission (Urban), to focus on rural and urban sanitation, respectively. While the rural component of the Mission is implemented under the Department of Drinking Water and Sanitation, the urban one is implemented by the Ministry of Housing and Urban Affairs.

1.3.2. NIRMAL BHARAT ABHIYAN: THE RECHRISTENING OF TSC:

India was supposed to achieve total sanitation (all households with toilets) by 2010, which was not achieved. Hence the United Progressive Alliance government (2004–2014) set a new target of an ODF India by 2022, including a much larger budget and an increased hardware subsidy to households, emphasising decentralised funding to gram panchayats. A big difference between the earlier and the new approach was that the focus was now on ODF communities rather than toilet construction, but the efficiency of the system remained doubtful as the possibility of corruption was higher due to higher subsidies (Chambers 2013). The subsidy for individual toilet construction was increased from 1,500 to 10,000 per household. With the beginning of the 12th Plan (2012–2017), the Total Sanitation Campaign was renamed ‘Nirmal Bharat Abhiyan’ (NBA, or the Clean India Campaign). The objective was to accelerate sanitation coverage by comprehensively covering rural communities through a saturation approach (Government of Meghalaya 2020). However, by Census 2011, access to toilets of rural households was still only 31 percent, despite a much higher number being claimed by then government of India (as we discuss later).

A survey conducted by the National Statistical Organization of a representative nationwide sample found that as of September 2018, 28.7 per cent of India’s rural

households lacked access to toilets and 32 per cent practiced open defecation. At that time, official data from the SBM painted a much more optimistic picture claiming that just 6 per cent of India's households lacked access to a toilet. This official data was not just from the MIS of the government's nodal ministry, but it was supported by what has come to be called the National Annual Sanitation Survey, with the latter being supported by World Bank funding. Other external surveys reveal similar discrepancies with administrative data. While SBM definitely improved sanitation, India may be far from completely open-defecation free, those surveys and independent researchers suggest. For example, the results of the NSS survey showed that Odisha (49.3 per cent of rural households having access to a toilet), Uttar Pradesh (52 per cent) and Jharkhand (58 per cent) were the worst states in terms of sanitation coverage in the July–December 2018 period. But according to data on the SBM dashboard at that time, sanitation coverage in these states was significantly higher. In Uttar Pradesh, for instance, according to the dashboard, 99 per cent of rural households had access to a toilet in September 2018. According to the government, these discrepancies are explained by respondent bias. Both the NSS in its survey report and the Jal Shakti ministry have suggested that respondents may have lied about access to toilets in the hope of accessing benefits under SBM. 'Respondent bias, in this case, is when individual households, when asked a leading question on whether they have ever received benefits from the government, do not admit they have toilets or LPG cylinders in the hope of receiving additional benefits from the government. In case of the 76th round of the NSS, the question on benefits received preceded that of access, thus leading to a significant underreporting of sanitation coverage', a spokesman for the sanitation department wrote in a response to newspaper queries about the discrepancies between the SBM data and NSS (Srivastava and Iyer 2019).This was not the first time administrative data on toilets constructed under SBM had come into disrepute. Independent surveys by organizations such as the Centre for Policy Research had shown earlier that the 'open defecation free' tag often betrays the on-the-ground reality, and portrays latrine ownership rather than usage (Deshpande and Kapur, 2019). Given that those in charge of meeting targets are also reporting these statistics, this creates a reporting bias in administrative data, these studies noted.

1.3.3. Swachh Bharat Mission – Gramin (SBM-Gramin)

The Sub-Group of Chief Ministers (2015) had noted that more than half of India's 25 crores households do not have access to toilets close to places where they live. Notably, during the 2015-19 periods, a major portion of expenditure under the Department of Drinking Water and Sanitation was towards SBM-Gramin.

The expenditure towards Swachha Bharat – Gramin saw a steady increase from 2014-15 (Rs 2,841 crores) to 2017-18 (Rs 16,888 crores) and a decrease in the subsequent years. Moreover, during 2015-18, the expenditure of the scheme exceeded the budgeted amount by more than 10 percent. However, every year since 2018-19, there has been some under-utilization of the allocated amount. As per the Department of Drinking Water and Sanitation, 43.8 percent of the rural households had access to toilets in 2014-15, which increased to 100 percent in 2019-20. However, the 15th Finance Commission (2020) noted that the practice of open defecation is still prevalent, despite access to toilets and highlighted that there is a need to sustain the behavioural change of people for using toilets. The Standing Committee on Rural Development raised a similar concern in 2018, noting that "even a village with 100 percent household toilets cannot be declared open defecation-free (ODF) till all the inhabitants start using them". The Standing Committee also raised questions over the construction quality of toilets and observed that the government is counting non-functional toilets, leading to inflated data.

1.3.4. Toilet coverage for rural households:

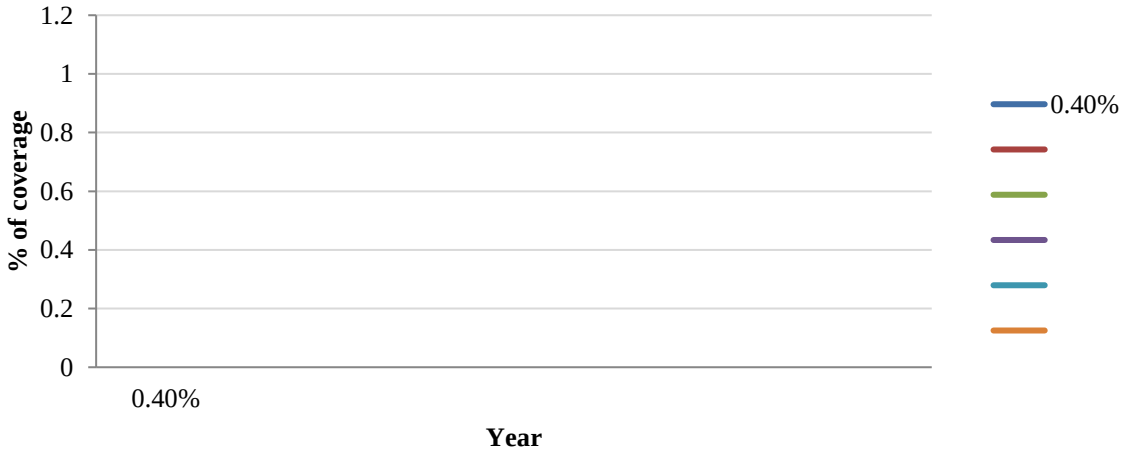
By 2001, only 22 percent of the rural families had access to toilets. It increased further to 32.7 percent by 2011. In 2012, TSC was revamped as Nirmal Bharat Abhiyan (NBA) to accelerate the sanitation coverage in rural areas through saturation approach and by enhancing incentives for Individual Household Latrines (IHHL).

The 15th Finance Commission also noted that the scheme only provides financial incentives to construct latrines to households below the poverty line (BPL) and selected households above the poverty line. It highlighted that there are considerable exclusion errors in finding BPL households and recommended the universalization of the scheme to achieve 100 percent ODF status.

Table No. 1. 2 Toilet coverage for rural households in India

Year	% of coverage
2014-15	43.8
2015-16	51.4
2016-17	65.4
2017-18	84.3
2018-19	98.5
2019-20	100

Fig 1.2 % of coveragefor rural households in India



Source: Accessed from Dashboard of SBM (Gramin) Ministry_Jalashakthi_PRS(2021)

1.4. THE ACHIEVEMENT OF TOTAL SANITATION CAMPAIGN:

UNICEF report (2011) explicitly highlights on the expenditure incurred under the TSC is shared between the Union Government, State Governments and beneficiaries in different ratios. For instance, while start-up activities are funded completely by the Union Government, IEC funds are shared between the Union Government and State Governments in an 80:20ratio. For the construction of toilets in households, schools and Anganwadi centres, beneficiaries also have to contribute a predetermined percentage of the costs incurred. An analysis of the spending patterns under the TSC reflects three broad concerns: inadequate funds for the programme; states' inability to draw more funds because of low utilization levels in the past; and poor quality of utilization.

Since its inception in 1999, TSC projects have been scaled up significantly and are currently operational in 572 rural districts. Remaining 27 districts are also being taken up in the next financial year.

The total outlay of 572 projects under implementation in the country is Rs. 12495.09 Crores, Central, State shares of the projects are Rs.7802.08 Crores and 2750.10 Crores respectively.

The success of the TSC lies in the fact that the community has contributed Rs. 1942.91 Crores to its share of TSC. The financial outlay of TSC projects has considerably increased since its inception. The implementation has been gradually improving. The financial expenditure (up to 25th June, 2007) is 3002.23 Crores, out of which Centre, State and beneficiary share are Rs. 1537.25 crores, Rs. 897.03 crores and Rs. 567.95 crores respectively. Significantly, the community has invested 567.95 crores so far. The financial details are given in the table below;

Table No. 1.3 Financial Outlay and Expenditure Pattern in TSC in crores

Share	Total Outlay	Released	Total Expenditure
Central	7802	2283	1537
State	2750	1345	897
Community	1943	835	568
Total	**12495**	**4463**	**3002**

Source: Report of Total Sanitation Campaign_ Sanitation for all 2012: Dept. of Rural Development and Drinking water supply, GoI.

Table No. 1.4 Physical Progress of the Total Sanitation Campaign (TSC) in Eleventh Plan During Financial Year (2007-08 To 2011-12)

Financial Year (Eleventh Plan)	IHHL BPL	IHHL APL	Total IHHL	School Toilets	Sanitary Complexes	Anganwadi Toilets
2007-08	5763430	5764460	11527890	236259	3006	86489
2008-09	5570899	5694983	11265882	253004	3245	68995
2009-10	5869608	6538170	12407778	144480	2230	66227
2010-11	6155933	6087798	12243731	105509	3377	50823
2011-12	4734816	4064048	8798864	122471	2547	28409

Source: Dataset provided by Shri P.K. Jha, Deputy Adviser (WR), Planning Commission. Source : Planning Commission (Twelfth Five Year Plan Document)

Fig. 1.3 Physical Progress of the Total Sanitation Campaign(TSC) in Eleventh Plan During Financial Year (2007-08 To 2011-12)

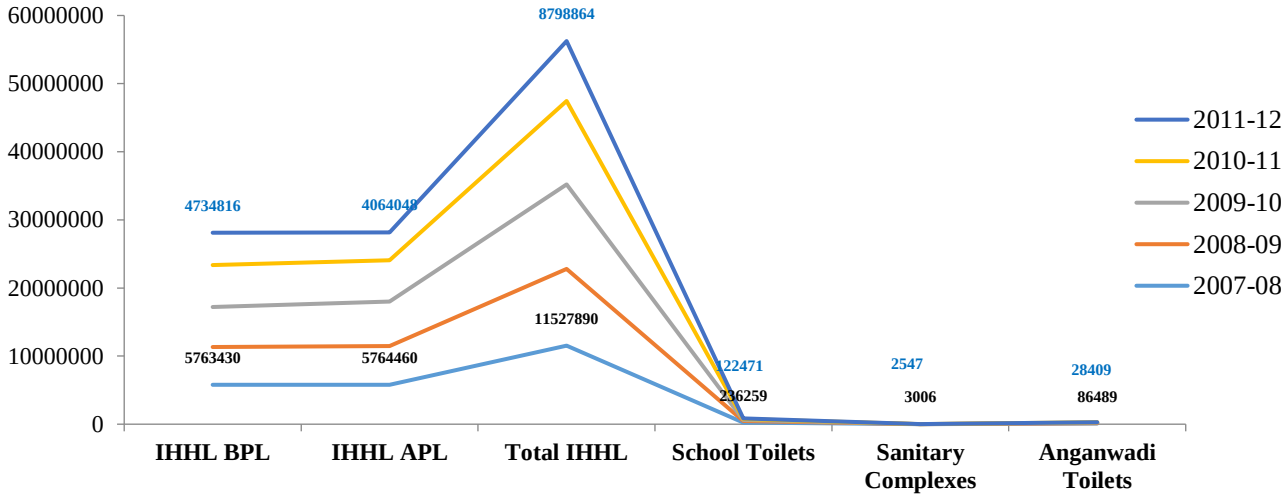


Table No. 1.5. State/UT-wise Sanitation Coverage in Rural areas as on 2018

Sl. No.	State/UT	Sanitation Coverage in %
1	A & N Islands	100
2	Andhra Pradesh	100
3	Arunachal Pradesh	100
4	Assam	85.83
5	Bihar	55.84
6	Chandigarh	100
7	Chhattisgarh	100
8	D & N Haveli	100
9	Daman & Diu	100
10	Goa	76.22
11	Gujarat	100
12	Haryana	100
13	Himachal Pradesh	100
14	Jammu & Kashmir	81.52
15	Jharkhand	76.99
16	**Karnataka**	**87.89**
17	Kerala	100
18	Lakshadweep	100
19	Madhya Pradesh	88.05
20	Maharashtra	100
21	Manipur	83.56
22	Meghalaya	100
23	Mizoram	100
24	Nagaland	91.73

25	Odisha	55
26	Puducherry	63.06
27	Punjab	100
28	Rajasthan	100
29	Sikkim	100
30	Tamil Nadu	98.72
31	Telangana	84.13
32	Tripura	74.77
33	Uttar Pradesh	68.83
34	Uttarakhand	100
35	West Bengal	93.48
		84.13

Source: **Ministry Of Drinking Water and Sanitation** Updated On 26th July, 2018

Table No. 1.6. State/UT-wise percentage of persons using toilets for the households having toilets as per National Annual Rural Sanitation Survey (NARSS) 2017-18

Sl. No.	State/UT	Toilet usage as per NARSS 2017-18
1	A & N Islands	98.4
2	Andhra Pradesh	96.3
3	Arunachal Pradesh	97.5
4	Assam	99.7
5	Bihar	95.8
6	Chhattisgarh	97.0
7	D & N Haveli	99.6
8	Goa	99.9
9	Gujarat	97.5
10	Haryana	99.5
11	Himachal Pradesh	99.9
12	Jammu & Kashmir	93.6
13	Jharkhand	92.2
14	Karnataka	94.4
15	Kerala	100.0
16	Madhya Pradesh	92.9
17	Maharashtra	96.9
18	Manipur	100.0
19	Meghalaya	99.7
20	Mizoram	100.0
21	Nagaland	99.8
22	Odisha	85.4
23	Puducherry	78.4
24	Punjab	98.6

25	Rajasthan	94.3
26	Sikkim	100.0
27	Tamil Nadu	71.4
28	Telangana	95.4
29	Tripura	99.6
30	Uttar Pradesh	87.9
31	Uttarakhand	99.6
32	West Bengal	94.1
	India	**93.2**

Source: Ministry of Drinking Water and Sanitation Updated On 2nd August , 2018

1.5. RURAL SANITATION IN KARNATAKA:

Open Defecation has been a common issue especially in rural India. Historically, it wasn't considered a shame or looked at from a sanitary perspective. Over the past few decades, Karnataka has seen the implementation of various sanitation projects under centrally sponsored schemes, externally aided programs and Government of Karnataka sponsored programs such as Nirmal Grama Yojane, Swachha Grama Yojane, etc. According to the Baseline Survey of 2012, out of 70.32 lakh rural households in Karnataka, 35 percent households had toilets, while the majority percent were without toilets. To achieve the desired goal of accelerating sanitation coverage across rural India, "Swachh Bharat Mission" was launched on 2nd October 2014 by the Government of India. From 2nd October 2014 to 19th November 2018, 48 lakh Individual Household Latrines (IHHLs) were constructed across the state.

With an objective to give more focus towards rural sanitation, central government rewarded scheme Sampoorna Swachhata Andolan was implemented from 2005 to March 2012, and Nirmal Bharat Abhiyan was implemented from April 2012 to 2nd October 2014 in all 30 districts of the state. Later Nirmal Bharat Abhiyan was renamed and restructured as Swachh Bharat Mission (SBM) Gramin, and was implemented on 2nd October 2014. Phase 1 of SBM Gramin prevailed from 2014 to 2020. Now, SBMG Karnataka Phase 2 is in process.

Every household, school and Anganawadi should have a toilet and it should be accessible. Everyone must use toilets instead of open defecation. It should be maintained well. Roads and lanes must be clean. Solid-liquid waste management is also one of the main objectives of this mission. Overall, SBMG Karnataka is working towards implementing activities to bring in total sanitation in all villages.

1.5.1. OBJECTIVES OF SBM (G) KARNATAKA:

- To bring awareness amongst rural people on the need for sanitation through hygiene awareness and health education
- To create the necessity for cleaner environment
- To encourage all rural households to construct and use toilets
- Promote personal hygiene, cleanliness at household level and community cleanliness and thereby improve the quality of life of rural people
- Establishment of sanitary facilities in all schools and Anganawadi in the villages and bringing in sanitation practices among children.
- The main objective of the Swachh Bharat Mission Gramin Karnataka Program is to achieve total sanitation in the entire rural environment by encouraging proper waste disposal and management at the village and community level.

PHASE: 1

Rural India has never considered Open Defecation as embarrassing or a wrong practice. Over the past few decades several personal hygiene and sanitation oriented schemes have been introduced which have improved the awareness towards the same in rural people.

Defecating in the open leads to many fatal diseases. It causes mortalities of children within 5 years old, contamination of ground water and water bodies, financial loss due to health problems and affects the dignity of a person. Swachha Bharat Mission (SBM) Gramin was launched on 2nd October 2014 to eradicate open defecation, and to dispose human excreta in a safe and scientific way by encouraging the use of toilet and personal hygiene.

SBM Karnataka Phase-1 was aiming at making Rural Karnataka open defecation free. This scheme was implemented between 2nd October 2014 to 2019, with the aim to bring behavioural change in people, eradicating manual scavenging and other related goals. On 19th October 2018, Rural Karnataka was declared Open Defecation free. During SBM Phase-1, constructions of 1283 Solid Waste Management Units were approved, out of which 470 units are functional. During this period, construction of

1675 community toilets were approved out of which 1191 community sanitary complexes are constructed and functional.

PHASE: 2

Swachh Bharat Mission (SBM) Gramin Phase-2 is effective from 2020-21 to 2024-25. In this period, emphasis is given on ODF Sustainability and Solid-Liquid Waste Management. Along with these, focus is also given on retrofitting of existing toilets, construction of twin pit toilets, personal hygiene, hand washing and menstrual hygiene management. Under LOB and NOLB, 4,20,116 toilets have been constructed. The number of IHHLs in the state as on 7th November 2020 is 48,82,772. Awareness is being created to encourage every person in the household to use toilets every time. Importance is also given for proper waste management at village and encouraging communities for the segregation at source. FSTPs are being constructed for liquid waste management, and constructions of Gobhar- Dhan units are in progress.

1.5.2. Major Components covered in SBM in Karnataka:

a. Individual Toilets:

Under this scheme, every BPL households, SC / ST households belonging to restricted APL sector, small and micro families, landless families, differently-abled families and household headed by women can construct individual toilets with a subsidy of Rs.12000/- which consists of Rs.7200/- from central government and Rs.4800/- from state government. The SC/ST family can get a benefit of Rs.15000/- where the state government provides an additional Rs.3000/- under SCP/TSP. Focus is also given for the construction of Community Toilets wherever needed.

b. Community Toilet:

Sustainability of ODF is the main objective of SBMG Phase-2. Central Ministry of Jal Shakti has instructed to construct community toilets if there is no availability of space to build individual toilets, and where there are maximum of 35 households. In the state, 905 community toilets are in use (as on August 2020), and the construction of 1862 community sanitary complexes are in progress. SBM (G) compensates up to 70 percent of the total fund and the remaining 30 percent can be covered under the 15th finance commission.

c. Solid - Liquid Waste Management (SLWM):

More stress is given on the solid liquid waste management in rural areas to achieve total sanitation. The central government gives funds to SLWM units based on the number of households. With effect from 1st April 2012, Rs.45 per capita for GPs which have a population of more than 5000, and Rs.60 per capita for the Gram Panchayats which have a population of less than 5000 for the construction of SWM units. For construction of a liquid waste management unit, an amount of Rs.660 per capita for GPs with population more than 5000, and Rs.280 for GPs with population less than 5000. The ratio is 60:40, out of which Swachh Bharat Mission provides 60 percent and the state government provides 40 percent of the funds. Apart from this, funds from 15th finance commission can also be utilized.

1.5.3. Access to sanitation Progress data in Karnataka:

Table No. 1.7. Rural households having access to toilet facilities

Sl No.	Year	% of households access to toilet
1	2008-09	29.88
2	2009-10	40.76
3	2010-11	48.86
4	2011-12	53.01
5	2012-13	55.97

Table No. 1.8 District wise accesses to toilet facility until 2012

District Name	Total Detail Entered (With & Without Toilet)	Total HH Detail with Toilet	Detail entered for no. of Households not having toilet					
			BPL	APL			Total	
				Identified	Unidentified	Total	(BPL+APL)	Total HH Identified
BAGALKOT	232631	36476	143106	26595	12726	39321	182427	169701
BALLARI	133899	31406	83706	2582	1504	4086	87792	86288
BELAGAVI	552476	111040	371278	41426	6167	47593	418871	412704
BENGALURU RURAL	149073	95446	50471	689	369	1058	51529	51160
BENGALURU URBAN	162916	134839	27811	66	97	163	27974	27877
BIDAR	218108	11864	192900	3791	2757	6548	199448	196691
CHAMARAJANAGARA	191963	26705	149609	1190	397	1587	151196	150799
CHIKKABALLAPURA	213744	48262	157967	664	140	804	158771	158631
CHIKKAMAGALURU	187130	111672	68122	558	378	936	69058	68680
CHITRADURGA	250663	56341	171305	813	562	1375	172680	172118
DAVANGERE	223739	88338	117433	6172	560	6732	124165	123605
DHARWAD	164432	56424	77847	5436	1028	6464	84311	83283
GADAG	142036	18144	108027	4757	3597	8354	116381	112784
HASSAN	338420	103585	216384	960	196	1156	217540	217344
HAVERI	208353	61331	130585	277	118	395	130980	130862
KALABURAGI	256677	25607	162839	14517	8977	23494	186333	177356
KODAGU	115997	91270	21172	1293	1156	2449	23621	22465
KOLAR	212565	45226	164003	484	215	699	164702	164487
KOPPAL	170720	15345	138553	1827	398	2225	140778	140380

District Name	Total Detail Entered (With & Without Toilet)	Total HH Detail with Toilet	Detail entered for no. of Households not having toilet					
			BPL	APL			Total	
				Identified	Unidentified	Total	(BPL+APL)	Total HH Identified
MANDYA	348277	155191	182439	3990	291	4281	186720	186429
MANGALORE	238289	227858	8663	647	130	777	9440	9310
MYSURU	402457	158303	222003	6335	906	7241	229244	228338
RAICHUR	273329	18572	230049	1433	1532	2965	233014	231482
RAMANAGARA	179426	42864	120771	2534	489	3023	123794	123305
SHIVAMOGGA	236824	136445	85357	1596	279	1875	87232	86953
TUMAKURU	427955	117693	289489	2048	699	2747	292236	291537
UDUPI	186529	158360	25081	1868	556	2424	27505	26949
UTTARA KANNADA	238981	108154	110823	6320	2481	8801	119624	117143
VIJAYANAGARA	197126	35509	143733	1547	668	2215	145948	145280
VIJAYAPUR	281880	58917	171070	10403	9427	19830	190900	181473
YADGIR	148303	20417	99351	494	618	1112	100463	99845
Total	**7284918**	**2407604**	**4241947**	**153312**	**59418**	**212730**	**4454677**	**4395259**

Source: Swachh Bharat Mission Target Vs Achievement On the Basis of Detail entered, Ministry of Jal shakthi, 2018

Table No. 1.9. Coverage of HH toilets (including unapproved) as on 2022

District Name	2013-14	2014-2015	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	HH's accessing Community and Other Toilet	Total HH Covered	IHHL Coverage (%)
1	2	3	4	5	6	7	8	9	10	11	12	13
BAGALKOT	10075	23766	25608	19660	56489	18273	28	2	0	35239	232631	100
BALLARI	13998	7358	9576	10516	37651	15707	0	0	0	0	133899	100
BELAGAVI	38606	55157	31223	71823	95894	136619	236	0	0	246	552476	100
BENGALURU RURAL	10544	20994	7001	20444	40	6	3	0	0	0	149073	100
BENGALURU URBAN	9003	9366	5313	13081	2	0	0	0	0	0	162916	100
BIDAR	9289	10989	12352	15024	52377	99798	222	2	16	5207	218092	99.99
CHAMARAJANAGARA	14403	18933	11914	20457	79931	1350	108	4	0	4096	191963	100
CHIKKABALLAPURA	17311	35351	26621	22510	67303	3	3	1	5	2	213739	100
CHIKKAMAGALURU	13637	14263	9121	31080	9331	39	184	0	0	0	187130	100
CHITRADURGA	14119	22848	12044	17194	85080	27262	47	0	0	1	250663	100
DAVANGERE	24572	18677	9107	15643	60685	0	0	0	0	113	223739	100
DHARWAD	19884	14664	6668	9247	33826	0	21	0	0	1	164432	100
GADAG	14246	28211	17037	18101	51446	192	0	0	0	658	142036	100
HASSAN	17187	44192	33471	71732	63762	1	0	0	0	747	338420	100
HAVERI	13108	26752	21623	18793	51479	16	4	0	0	0	208353	100
KALABURAGI	22962	17944	15019	13449	41288	75691	9	0	0	6	256677	100
KODAGU	6895	10685	5130	2768	0	0	0	0	0	0	115997	100
KOLAR	15992	27334	26111	34712	74303	1	0	0	0	0	212565	100
KOPPAL	54051	45113	20115	19697	44851	34	1	0	0	0	170720	100
MANDYA	17033	77850	45942	25196	29944	790	27	0	0	3822	348277	100
MANGALORE	4477	2432	845	2983	787	2	1	0	0	2	238289	100
MYSURU	29046	32378	29633	33147	108727	1	0	0	0	0	402457	100
RAICHUR	13699	19542	12441	22042	43843	127063	2191	2	273	188	273056	99.89

RAMANAGARA	18247	31417	25852	31042	33075	0	2	0	5	196	179421	100
SHIVAMOGGA	12473	29137	19541	35890	898	1	7	0	0	0	236824	100
TUMAKURU	34780	44128	27836	32449	112670	47789	44	0	0	1250	427955	100
UDUPI	10669	11548	4852	683	7	0	0	0	0	2	186529	100
UTTARA KANNADA	9282	31535	21480	35786	24773	2	0	0	0	123	238981	100
VIJAYANAGARA	0	12558	10159	20002	72457	19116	10	0	0	0	197126	100
VIJAYAPUR	16109	19220	9577	13234	39515	83096	47	20	0	14864	281880	100
YADGIR	0	4700	8189	9847	27001	50634	1	0	0	25	148303	100
Total	**505697**	**769042**	**521401**	**708232**	**1399435**	**703486**	**3196**	**31**	**299**	**66788**	**7284619**	**100**

Source: Swachh Bharat Mission Target Vs Achievement on the Basis of Detail entered, Ministry of Jalshakthi, 2021

Table No. 1.10 DISTRICTWISE REPORT ON NBA PROGRESS ENTERED BY GRAMA PANCHAYATS

District Name	No. of GPs	Total No of Households as per survey	Total No of Households with toilet as per survey and social audit	Total No of Households without toilet as per survey and social audit (D)	Total No of toilets constructed in (2013-14) (A)	Total No of toilets constructed in (2014-15) (B)	Total No of toilets constructed in (2015-16) (C)	Total No of toilets constructed (A + B + C)	Balance to be covered
BAGALKOTE	198	274412	31856	242556	5113	6384	14254	25751	216805
BENGALURU	96	185298	156264	29034	6939	843	1053	8835	20199
BENGALURU RURAL	105	176657	133633	43024	6290	1518	1331	9139	33885
BELAGAVI	505	770706	142109	628597	24741	885	8107	33733	594864
BALLARI	199	299243	57950	241293	8766	1500	6165	16431	224862
BIDAR	186	353945	9463	344482	8464	245	10384	19093	325389
VIJAYAPURA	213	330515	14574	315941	8697	785	9175	18657	297284
CHAMARAJANAGARA	130	274308	40606	233702	5845	2731	3830	12406	221296
CHIKKAMAGALURU	227	221518	131606	89912	7655	2602	3858	14115	75797
CHITRADURGA	189	329313	85850	243463	5893	133	5443	11469	231994
DAKSHINA KANNADA	230	288040	276404	11636	2678	38	1367	4083	7553
DAVANAGERE	233	306181	102282	203899	15582	2291	8275	26148	177751
DHARWAR	144	181219	45729	135490	13981	1446	5125	20552	114938
GADAG	122	174595	21333	153262	8696	3089	2268	14053	139209
KALABURAGI	264	400194	29340	370854	7657	17	1	7675	363179
HASSAN	267	408565	94423	314142	11728	1558	11331	24617	289525
HAVERI	224	310603	75953	234650	7861	1193	12910	21964	212686
KODAGU	104	125074	107991	17083	4594	2185	1342	8121	8962
KOLAR	156	275435	56730	218705	12598	384	1236	14218	204487
KOPPAL	153	257991	20958	237033	36817	939	5626	43382	193651

MANDYA	234	393774	148695	245079	6226	19981	62077	88284	156795
MYSURU	266	471224	175401	295823	3628	1544	14696	19868	275955
RAICHUR	180	391112	15076	376036	7762	444	8129	16335	359701
SHIVAMOGGA	271	280086	170838	109248	10630	2653	11266	24549	84699
TUMAKURU	331	590587	94093	496494	14328	4881	8788	27997	468497
UDUPI	158	214635	184473	30162	9918	418	579	10915	19247
UTTARA KANNADA	231	263527	125183	138344	7593	6905	5913	20411	117933
CHIKKABALLAPURA	157	254979	45368	209611	11042	955	2661	14658	194953
RAMANAGARA	127	208036	52203	155833	11712	1202	5255	18169	137664
YADGIR	123	207391	8762	198629	5294	391	2363	8048	190581
TOTAL	**6023**	**9219163**	**2655146**	**6564017**	**298728**	**70140**	**234808**	**603676**	**5960341**

Source: Data Computed by author (accessed @ 2015, National Informatics Centre, Karnataka)

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Millennium Development Goal (MDG) "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

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CHAPTER- 2

REVIEW OF LITERATURE

2.1. Introduction

2.2. International Studies on Sanitation and Defecation, Sanitation and Health and Sanitation and Waste Management

2.2.1. Contextual framework in India's prospective: national coverage

2.2.2. Status of sanitation

2.2.3. Financial flow for sanitation

2.2.4. Institutional role in sanitation sector

2.2. State level studies on sanitation & defecation; sanitation & health; sanitation &waste management

References

2.1. Introduction:

This chapter deals with Review of related Literatures for the theoretical understanding of the research studies on the impact of implementation of Total sanitation Campaign (TSC). For the this study, the researcher reviewed a wide range of literatures covering books, journals, published recent reports from Govt. of India, Govt of Karnataka, Census, evaluation studies, case studies, web- based material, working papers etc.. The academic literature landscape is varied its focus which includes- the significance of sanitation, the intersection between gender and specifically women's involvement in sanitation and water and hygiene related activities. The review of literature covered international, national and state level studies related to sanitation and open defecation, sanitation and health and sanitation and waste management etc,.

2.2. International Studies on Sanitation and Defecation, Sanitation and Health and Sanitation and Waste Management

The researcher paid lot of attention to study and review the literature to understand various components/ factors/ issues related to sanitation/ latrine situation. While doing so, researcher understood the importance of carrying review by understanding International prospective towards this study.

Chambers (2009) conducted the study on "Going to Scale with Community-Let Total Sanitation: Reflections on Experience, Issues and Ways Forward". The study reveals that, perhaps as many as 2 billion people living in rural areas are adversely affected by open defecation (OD). Those are sufferer likely due to lack of toilets; privacy and hygiene are women, adolescent girls, children and infants. Sanitation and hygiene in rural areas have major potential for enhancing human wellbeing and contributing to the MDGs.

Haws (2006) conducted study on "Access to Safe Water and Sanitation: The First Step in Removing the Female Face of Poverty" reveals that, the key to sustain development is organizing community towards holistic growth. Further study reiterates that community organization involves the direct participation of women enhances the changes for success significantly. It is understood that if progress to be achieved in improving personal health and community well-being, women have to be involved and in to the extent to lead the way. Metwally et al., (2006) conducted study on "Improving the roles of rural women in health and environmental issues" reveals that, sanitation programmes have failed adequately to address social influences such as those related to gender and power which have profound effect on women and empowerment. The role of women for increased

participation in sanitation had been informed by more traditional approach; as a household managers, children bearers and environmental conservationists. As a result necessities that women in their contexts have been availed but little efforts have been made to change their inferior status in the society. For instance availing latrines within household reach to enable them undertake household roles, instead of challenging the norms that perceive women as household managers.

Hutton G. et.al (2008) conducted study on "Economic Impact of Sanitation in South Asia", wherein this study reveals that the issues viz., health, water, environmental, tourism and other welfare impacts associated with poor sanitation in Cambodia, Indonesia, the Philippines and Vietnam. The study emphasizes that the impact measurement focused mainly on a narrow definition of sanitation- human excreta management and related hygiene practice. The measurement of water resource impact also includes grey water and the measurement of environmental impact includes solid waste management. This study provides an important evidence to support further investment in sanitation in these countries by examining the economic impacts of poor sanitation and the potential gains from improved sanitation. The specific goal of this sanitation impact study was to provide decision-makers in country and regional level with better suggestion on the negative economic impacts of poor sanitation and to provide tentative estimates of those negative impacts that can be mitigated by investing in improved sanitation.

Mitik and Decaluwe (2009) conducted study on "Market Labour, Household Work and Schooling in South Africa: Modelling the Effects of Trade on Adults' and Children's Time Allocation" suggests and concludes that for ensuring the success and sustainability of any sanitation programme women must be given enough space and opportunity to take active part in it. Galvin (2015) conducted the study on "Talking shit: is Community- Led Total Sanitation a radical and revolutionary approach to sanitation?". This study reveals that, Community Let Total Sanitation (CLTS) is a one of new approach to sanitation that has been widely adopted by international and national development organizations and national governments and implemented in 56 countries in the globe south. Lawrence et. al (2016) conducted the study on "Beliefs, Behaviors and Perceptions of Community-Led Total Sanitation and Their Relation to Improved Sanitation in Rural Zambia". The study explored that, inadequate hygiene and sanitation remain leading global contributors to morbidity and mortality in children and adults. Through "triggering" activities strategy used for improving sanitation access

is community-let-total sanitation (CLTS), in which participants are guided into self-realization of the importance of sanitation.

Muylwijk (2006) studied on "A gender approach to sanitation for empowerment of women, men and children". He reveals that three important concepts such as gender, gender ideology and empowerment related to sanitation sector is more essential. According Muylwijk empowerment has four interdependent elements, which are the social, the economic, the political and the physical aspects. In sanitation all four elements are strongly obtainable. Further the study highlights that women are the worst victims of poor sanitary situations but they are the most important actors in this field. Women indeed play a vital role in keeping family health and cleanliness of house. Author further concludes that the finding solutions for improved hygiene and sanitation need to take on prospective of gender ideology. However study also suggests the participation of stakeholders as a solution to actualization of sanitation programmes, but it is only adequate if the prevalent gender ideology is taken into account. Being identified women as main change maker, the equitable responsibilities lies with community leaders, and with men.

Globally, 2.4 billion people do not have access to adequate sanitation and most of them tend to be victims of poverty (Myles, 2003). Further, in the developing world 50 per cent of the population is without adequate sanitation (World Bank, 2003) and suffer with diarrhoea, trachoma and schistosomiasi (WHO and UNICIEF, 2000) leading to considerable loss and disabilities of human resources. Considering this, the international community set provision of sanitation as part of the Millennium Development Goals, to reduce to half by the year 2015, those without adequate sanitation facilities. Considering all parameters, this means that an additional 350,000 people have to be covered every day with improved sanitation services by 2015 (IRC, 2003). Shova Adhikari & Namaste Lal Shrestha (2006) conducted study on "Rural Sanitation: School Led Total Sanitation: A successful model to promote school and community sanitation and hygiene in Nepal". The study reveals that insufficient funds to develop sanitation and hygiene and resultant low coverage level have left Nepal in a condition, where reaching millennium goal target of 100 percent coverage by 2015 looks very difficult. The report further recommends that children can act as change agents allied with the success of school sanitation and hygiene education made UNICEF Nepal to develop School Led Total Sanitation (SLTS), where open defecation free areas are achieved with school children in a leading promotional role. Devkota

(2007) conducted study on “Drinking Water Policies and Quality Issues in Nepal”. The study reveals that the impact of poor sanitation on health in Nepal has estimated that because of poor drinking water, in Nepal it has been estimated that every year about 45,000 children below the age of five years die from sanitation related problems, which are attributed to inadequate supplies of water and / or its poor quality and poor sanitation facilities. Author further argues that the inadequate water supplies nearby can also have a significant impact on sanitation.

Poulos et.al (2007) conducted study on “A Guide to Water and Sanitation Sector Impact Evaluations”. The study reveals that to provide rigorous scientific impact evaluations which imply that water and sewerage policies are effective in delivering many important development goals. The purpose of the study is to serve as a guide for conducting impact evaluations in the water and sanitation sector. The impact of such policies and programs range from greater efficiency in the utilities sector, improved access to higher quality services, health improvements, increased incomes and consumption, social and gender inclusion and education improvements. The analysis describes in detail various definitions of evaluation and types of economic evaluations (cost-benefit, cost effectiveness analysis). It focuses on impact evaluations done in various World Bank Projects (e.g. Armenia, Bolivia, Brazil and India) with the goal to measure the impacts of programs on individual or household and whether or not they are the result of the programme.

Pruss-Ustun A et.al (2008) conducted study on “Better Health: Costs, Benefits and Sustainability of Interventions to Protect and Promote Health”. This study analysed the country data of disease burden attributable to unsafe water, inadequate sanitation, insufficient hygiene and inadequate management of water resources. It highlights that the level of disease could be prevented through increased access to safe water and better hygiene. The study provides epidemiological evidence and economic arguments for fully integrating water, sanitation and hygiene in countries’ disease reduction strategies. It also provides the basis for preventive action by all relevant sectors managing critical water resources and services in support of public health efforts. The burden of certain water related diseases viz., diarrhea, malnutrition, intestinal nematode infections, lymphatic filariasis, trachoma, scistosomiasis, malaria and other diseases (dengue, Japanese encephalitis and onchocercisis) are described and quantified. The study suggests further investigation on various factors related to water, sanitation and hygiene

which includes water hardness, lack of which has been associated with cardiovascular disease; fluoride in drinking-water, high concentrations of which are associated with dental and skeletal impairments; arsenic content of drinking-water, which is associated with various cancers; spinal injury, which is a risk related to recreational water environments; legionellosis, which is associated with poorly maintained artificial water system. It also suggests that while some health impacts are small at a global level they could reach high local or national importance.

Smith et, al. (2004) have focused on identifying sanitation needs from the perspective of informal community residents, addressing need related issues, and empowering Zulu and Xhosa women of South Africa. The study used a multistep approach to identify and access communities of interest, reflexive critique during data collection from 300 heads of households, and a reiterative process to identify major themes. The study explains about money and resources for piping clean water into the communities which was identified as a need. Educational information was believed to be the most significant area of need and found that through education, individuals could make a significant difference in their quality of life in the shortest period of time. They also found that the link between sanitation and health was established for informal-community residents. The study concluded that community participation has enhanced understanding and self-confidence, which built bridges and promoted personal growth and community enhancement. These concepts facilitated health promotion for current and future residents. They suggested that every programme needs to be empowered and provided an opportunity for them to articulate community needs.

2.2.1. CONTEXTUAL FRAMEWORK IN INDIA'S PROSPECTIVE: NATIONAL COVERAGE: Sanitation and Defecation, Sanitation and Health and Waste Management

UNICEF (2004) conducted "Baseline Study of UNICEF-DFID Assisted District: A Summary". The study was done in 12 selected districts in the state of Andhra Pradesh, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal assisted by UNICEF-DFID's sanitation baseline study. The consideration selected sanitation indicators like: use of toilets by households, access and availability of toilets in schools and prevalent hygiene practices at both household and community levels and found that lack of subsidy for households to construct toilet need not be looked at as a limiting factor. On the contrary it is indeed confirmed that subsidy tends dilute

ownership (and use) of the toilets. Counter checking with districts selected for study it was found that majority of the students had no access to school toilets. It was felt that a special emphasis should be laid on making school toilets available to students; at the same time, special focus should be given on the need for safe water handling practices and the necessity of disposing children's excreta in a proper manner, away from habitations- so that they do not contribute to disease transmission. The study further suggests that for proper cleaning, the necessity of washing hands with soap or fresh ash must be given utmost priority. Special attention needs to be paid to washing: before cooking or serving food; before eating or feeding child; after defecation and disposal of child's faeces.

In India, the severity of sanitation problem has a long history. In 1935 British troops suffered due to sanitation related diseases as study conducted by Ramasubban, (1982). Bhore (1944) and Environmental Hygiene Committee (1948) recommended better sanitation services and this became a blueprint to make budgetary allocation during the First Five-Year Plan in the year of 1951-56. But the sector again came into limelight 20 years later, during the emergency 1975, and latrine construction was given priority. The Fifth Five Year Plan endorsed priority to sanitation by stating that, "the elimination of utter poverty will not be attained as a corollary to certain acceleration in the rate of growth of the economy alone, but improvements in drinking water and environmental sanitation have direct correlation with levels of living". Thus, providing public health facilities became part of poverty alleviation programme. This is, in fact an eye opener for the policies regarding sanitation services. With the commencement of the International Water and Sanitation Decade, the Government of India drew up new policies with the support of the United Nations (UN) and other external agencies. As part of this recommendation, the Central Rural Sanitation Programme (CRSP) was launched in 1986. Following this, various diversified programmes were also being initiated by the Ministry of Rural Development in 1990s, to suit the local needs. These new policies and new strategies have shown a marginal impact in coverage. Finding from lethargic progress in the implementation of CRSP, reforms were introduced and programme was renamed as Total Sanitation Campaign (TSC, 1999), which includes construction of latrines followed by services such as, provision of latrines, disposal of liquid and solid waste and domestic as well as environmental hygiene. This approach is 'demand driven', the beneficiaries have a share of marginal capital cost and be part of its implementation process and thereby to create community ownership (GOI, 2002).

This new concept has been developed based on baseline survey findings 'On Knowledge, Attitudes and Practices in Rural Water Supply and Sanitation' by Indian Institute of Mass Communications (1996-97).

The TSC, in addition to households, extends support for community Sanitary Complexes, which will have multiple facilities such as toilets, washing platform, bathing rooms, etc. The unit cost is up to Rs 2 lakh and shared by the GOI, State Government and the community in the ratio of 60:20:20. However, the percentage of households covered with latrine is just 22 per cent as suggested in the Census year of 2001. In other words, 78 and 26 per cent of the households in rural and urban areas do not have access to latrines. The variation across states show that states like Kerala, Assam, Punjab, Andhra Pradesh, Delhi, Gujarat, Uttar Pradesh and **Karnataka** have better facilities. The reason for the better performance of these states was attributed to better intervention of State and strategically countered planning.

2.2.2. STATUS OF SANITATION:

As highlighted above and as per World Health Organization report there are about 2.6 billion people or 42 per cent of the world's population, lack access to basic sanitation (The Hindu: Oct-26-2008: 4). The third South Asia Conference report stated that, two of every three among South Asia's 1.5 billion people lack access to appropriate sanitation (SACOSAN III: 2008). Worldwide around 2.5 billion people are without improved sanitation and around 1.1 billion of those, mostly live in rural areas; still they have the practice of open defecation (WHO/UNICEF 2010). A study by Serageldin (1994) analysed the sanitation coverage in developing countries during the period 1980 to 1990. The study pointed out that, about 1.7 billion do not have adequate sanitation facility in the world and found that sanitation quality is much worst in developing countries as compared to developing/ technology advanced countries around the world.

Provision of Sanitation in India:

Rural water supply and sanitation situation in India during the period 1981-1985examined by author Bijlani and Rao (1990) based on NSSO and CSO data, the study revealed that, about 28.4 per cent of urban population and 0.72 per cent of rural population were covered by sanitation facility in India in the year 1985. The study

found that nearly about 95 per cent of the total population did not have sanitation (human and other waste disposal) facility. However, in India, as per the NSSO (1988-89) there about 10.96 per cent in the 44th round and 17 per cent of rural households in 54th round (1998-99) were having latrine facility. The study conducted by Saleth and Sastry (2004) summarizes that the sanitation situation stands worse as 75 per cent of rural populations do not have access to sanitary and basic hygiene

Mohanty (2005) has examined the status and scenario of water supply and sanitation in rural and urban areas of Orissa. The study presents that sanitation and drinking water are serious and almost insurmountable problems in both urban as well as rural areas. Providing access to both these vital utilities for all the people is a real challenge to both state as well as central governments, The study found that adequate quantity and quality of safe drinking water and extension of safe sanitation facilities is essentials for providing sustainable standard of living and quality of life for all people in urban as well as rural areas. The study highlights that rural sanitation and water supply should become demand driven from people instead of being imposed from the governments. He concluded that sanitary awareness of rural people and their hygienic approach to generate demand for safe drinking water and perfect sanitation in villages. The study suggested that the natural drainages in the villages should be converted into permanent sewerage systems and public wells should be in the centre of village for all people to access. The study recommended that to increase awareness and increase demand for sanitation, the NGOs must be involved in implementing these vital schemes because, without spreading awareness among masses, creation of safe water supply and sanitation will become soon unsustainable both in rural as well as urban areas.

The National rural sanitation coverage has eventually gone up to 57.5 per cent in 2008. It is found that districts have shown considerable variations in their level of improvement resulting there by a range of 26.07 per cent to 100 per cent. The study presents the access to toilets is not less than 25 per cent in any district.

Government of Haryana (2008) report has explained the rural sanitation coverage in Haryana. According to report the sanitation coverage of the state was 28.66 per cent, on an average basis, with a range of 14.5 per cent to 69.9 per cent in different districts. The study on drinking water and sanitation in rural Madhya Pradesh

conducted by Das,(2012) found that the state Madhya Pradesh continues to suffer from one of the poorest and disturbing records in rural sanitation and the proportion has only reduced to 87 per cent a decade later as noted in the Census of India 2011, this clearly beckoning a massive challenge faced in the state as it has hardly made any efforts towards providing one of the most basic amenities to its rural population. Further the study highlights that 13 per cent of households had toilets, about 10 per cent have water closets whereas type of toilets have is either pit or other type and only 20 per cent of the rural households had wastewater outlets within the house and 90 per cent of them have connected through open drainage. The study concluded stating that the lack of usable and reliable database on the coverage and related aspects have been a cause of concern and the scenario of rural sanitation in the State leaves much to be desired in terms of the massive intervention that is needed to raise the coverage from a deplorable about 13 per cent to achieving what may be termed a situation of open defecation-free state.

Reasons for Inadequate Sanitation Facilitates:

Bijoyini Mohanty (2005) conducted study on "Drinking Water and Sanitation sector of Orissa: Further Tasks" reveals the status and scenario of water supply and sanitation in rural and urban areas of Orissa as these two issues are in the domain of the state government. In general rural sanitation and drinking water are serious and almost insoluble problems in both urban and as well as rural area. Providing access to both these vital utilities for all the people is a real challenge to both state as well as central governments. To provide sustainable standard of living and decent quality of life for all people in urban as well as rural areas, it is essential to deliver adequate quantity and quality of safe drinking water and extend safe sanitation facilities. Burra, Patel and Kerr (2003) have explained a serious human problem faced by slum dwellers in congested slum areas like Dharavi in Mumbai. The study revealed that toilet blocks built by municipality get into serious poor condition within three months of construction, leaving people with little or no alternative but to defecate in the open in Dharavi, Mumbai. The study also found that the public toilet block is normally used for open defecation by large number of people due to shortage of space which in turn, produces very serious health problem and contributes to high infant and child death rates. Study shows that the toilet blocks are also used to dump household wastes since there is no arrangement for lifting garbage of the community. The study has pointed out the

pathetic and pitiful plight of women and young girls who have no access to safe and clean toilets. The study found that women had to wait until the nightfall to go for open defecation, which was the only option left to them to protect their modesty. An attempted made by Zacharia and Zhordt (2004) to examine whether a hygiene intervention within community-based sanitation and water projects has impact on behaviours of human in Kerala, Southern India. The study found that latrine used by women as stated in the report stands at 93.9 per cent and only 58.9 per cent for men and it was found that the difference between practices of men and women in latrine use when at home is also statistically significant. Marieke Slob (2005) conducted study on "Logistic Aspects of Ecological Sanitation in Urban Areas: Case study in Low- Income Community in Delhi, India" is reveals that, excreta transport activities are very limited. In urban areas reuse on-site is not always possible, because of lack of space. With experience in urban areas still being quite limited, there is a knowledge gap concerning the logistics of getting the matter from households to central treatment facilities and reuse locations. The study has therefore worked out a transport system for the collection and transport of excreta from the households in a specific urban community to farmers outside that specific city.

The emergence of Sanitation Programmes:

Ganguly (2006) has evaluated the National Rural Sanitation Programme of the Indian Government which was initiated in 1986. The study has evolved into the Total Sanitation Campaign, which now operates in 578 districts of 30 states/union territories and to reach India's rural population of 71 per cent. The study highlighted that TSC envisage promoting sanitation and hygiene by catering to 138 million rural households which in fact accounts 55 per cent are without toilets. According to the study TSC provides a platform for innovation and creative solutions. Panse (2006) depicted a dismal view of India's state of affairs towards sanitation. The author pointed out the poor living condition among people in urban slums and rural areas without adequate sanitation and water supply. The study carved effective strategies and action to deal and provide improved sanitation and safe water supply to achieve a better economic growth rate and thereby to acquire higher productivity. The study also suggested that a considerable effort needed to reduce this intimidating excess of sanitation with sustainability as a part of the programme. Further author has suggested for immediate

action towards holistic approach to sanitation and water management which would be the most significant and viable solution.

UNDP report (2006) revealed that the National Slum Dwellers Federation in Mumbai stimulated people to construct toilets. The study found that the successful Total Sanitation Campaign adopted by West Bengal had achieved impressive progress. In Hyderabad, the water utility had increased coverage and improved performance in revenue collection. Study recorded that India is just above Afghanistan and Pakistan in sanitation indices among developing countries in the world. The study also pointed out that India has initiated various government programmes, including total sanitation campaign (TSC) undertaken by the Ministry of Rural Development which aimed at improving rural poverty and improving sanitary conditions.

Usage of Latrine Facility:

Improving water and sanitation facilities are necessary to reduce water and sanitation related diseases in any country. To bring about real improvement in health, the installation of facilities has to go hand in hand with their proper use and maintenance, hygiene promotion aims to ensure the proper use and maintenance of facilities by motivating people to change their behaviour (IRC 2004). The proper using of latrine indicates their poor attitude and awareness for personal hygiene and public health in rural areas. Mandal (2011) examined efficiency and effectiveness of rural water supply and sanitation services in West Bengal. The study reveals that majority of rural households are getting safe drinking water but most of the households are still lacking sanitation facilities. It is observed that some of the families do not have the practice of using sanitation though it is available at their house. This indicates the lack of health consciousness of the rural population. The study concluded that supply of sanitation materials to the rural people is not the only solution. The proper sanitation lies in its effective management in organizing sanitation drive towards raising the level of social consciousness.

Ganguly (2006) conducted study on “India’s national sanitation and hygiene programme: From experience to policy- West Bengal and Maharashtra models provide keys to success”. The study reveals the National Rural Sanitation Programme of the Indian Government which has begun in 1986. It has evolved into the Total Sanitation Campaign (TSC), which now operated in 578 districts of 30 states/ union territories and

is resourced with over US $ 1 billion, to reach India's rural population of 71 percent. This has boosted the supply chain, promotes sanitation and hygiene and caters to 138 million rural households of which around 55 percent are still without toilets. Lessons from three decades of a government- driven programme suggested that forward looking policies, combined resources, a strong institutional setting and decentralized delivered are key to reaching at least half of these by 2012, the end of India's 11th Five Year Plan. Total Sanitation Campaign provides a platform for innovation and creative solutions. The state of Tamil Nadu, one of the leaders in school sanitation, hygiene education and gender concerns is now joined by states including Gujarat and Uttar Pradesh to infuse the much needed qualitative aspects. Total Sanitation Campaign will now have to embrace far more than the basics to make water and sanitation goals achievable, sustainable and equitable.

Panse (2006) conducted study on "Ecological Sanitation-A Need of Today, Progress of Eco-San in India". This study reveals that portrayed a depressing picture of India's state of affairs in sanitation. It emphasizes that, for the poor people living in urban slums and rural areas without adequate sanitation and water supply, to achieve a better economic growth rate and higher productivity, priority has to be given to health of these people. For this improved sanitation and safe water supply is necessary.

Singh and Singh (2007) conducted study on "Diaspora Philanthropy in Action: An Evaluation of Modernization in Punjab Villages". The study reveals that the integrated sustainable top-down approach followed for the purpose of modernization of villages and observed to be very cost effective, replicable, participatory, pro-poor and inclusive model of village modernization. Completion of projects has led to better community relations and capacity building, substantial fall in water and sanitation borne diseases and reduction in flies, mosquitoes and foul smell in the project villages.

SANITATION FACILITY IN SCHOOLS:

The provision of safe water and sanitation facilities in schools would be the first step towards a healthy physical learning environment benefiting both learning and health. Nanaware (2006) studied the sanitation facilities at high school level for teachers and students in Malshiras Tehsill of Solapur district in Maharastra. The study revealed that the un-aided high schools did not have sanitation facilities to teachers and students, and many students were ignorant about the importance of sanitation facilities.

Adhikari and Shrestha (2006) have examined that children can act as change agents allied with the success of school sanitation and hygiene education made UNICEF Nepal to develop School Led Total Sanitation, where open defecation free areas are achieved with school children in a leading promotional role. The paper shows how SLTS have shown very impressive results to date and paves the way to speed up the process of intensive latrine coverage in school catchment areas. The study found that inaccessibility to latrine has led to increased dropout rates among girls, and the enrolment of girls in schools and regular attendance in schools has increased after implementation of the SLTS programme. The study also examined that the open defecation decreased and the sickness also got decreased significantly, and regular hand wash helped students to stay clean and healthy. The study concludes after the implementation of SLTS, the reported cases of diarrhoea got declined drastically.

A study conducted by Child Health and Development Centre, Makerere University (CHDC, 2006) found that almost all schools surveyed did not meet the minimum sanitation and hygiene standards. The study presented that the Government has focused on construction of toilet facilities in government-aided schools through the School Facilitation Grant, UPE funds and Local Government Development Programme (LGDP). It concluded that almost of the programmes are less focus on changing practices in sanitation and hygiene in schools. Ganguly (2006) has analysed that the state of Tamil Nadu, which is one of the leading state in school sanitation, hygiene education and gender concerns. The study concluded that the TSC programme has tried to achieve 100 per cent water and sanitation facility in all the schools. Total Sanitation Campaign (TSC) and Sarva Shiksha Abhiyan (SSA) made efforts to provide 100 per cent of latrine facility to all school in the rural areas. Though the national level coverage of school sanitation was 84.3 per cent in the year 2011 (DISE 2011).

2.2.3. FINANCIAL FLOW FOR SANITATION:

In India, the major sources of finance for rural sanitation come from government agencies including central, state and local government, donor agencies etc. Getachew (1981) studied the financial aspects of sanitation in rural Ethiopia and found that the share of sanitation sector in total financing is negligible when compared to water supply sector. According to the study weakness in preparation of plans, poor implementation capacity, inadequate emphasis on public sanitary education, deficiency in proper

training for manpower, poor community participation, lack of knowledge on the benefits of sanitary service and shortage of funds from domestic and external sources are the main reasons for lack of sanitary facility in developing countries. He suggested that, provision of adequate funds both from local and external services can improve the level of sanitation programme. A study by Serageldin (1994) reveals the challenges in financing water supply, sanitation and environmental sustainability. The author found that water and sanitation in developing countries is much more seriously degraded, and is deteriorating rapidly due to far fewer financial resources available for environmental protection and week institutional capacity. However, he concludes that over the past thirty years developing countries have been allocating an increasing share of gross domestic product to public spending on the provision of water and sanitation services to attain sustainable progress in improving the lives of people in developing countries.

World Bank (2004) reports made attempt on the challenge of financing sanitation for meeting the Millennium Development Goals. The report explored three strategic issues, one is to find effective strategies and funding mechanisms for sanitation promotion while ensuring rapid service expansion, secondly to leverage household, community, local government and other market based resources for the sector while ensuring demand responsive approaches, thirdly to redesign public finance strategies for sanitation which focus on identifying, sustainable sanitation access, institutional mandates, sources of finance and financing mechanisms, and performance of monitoring systems. The report concluded proper monitoring systems are required to take actions by key stakeholders. Hutton and Haller (2004) have attempted to estimate the economic costs and benefits of a range of selected interventions to improve water and sanitation services. The study considered 17 WHO sub-regions and considered the global level. The study used methodology included a cost-benefit analysis, cost-effectiveness analysis and sensitivity analysis. Study analysed that based on changes in water and sanitation service levels and categorized into improved and unimproved services. The study implied that all water and sanitation improvements were found to be cost beneficial, and this applied to all world regions. Further the study points out that transmission of diseases is most closely associated with poor water supply, poor sanitation and poor hygiene. Study concluded that water borne and water washed diseases are responsible for the greatest proportion of the direct-effect i.e. water and sanitation related disease burden, which mainly consists of infectious diarrhoea.

A study by Adhikari and Shrestha (2006) have pointed out that insufficient funds are main reasons for low coverage of sanitation in Nepal and made it difficult to reach millennium goal target of 100 per cent coverage by 2015. Hutton, Haller and Bartram (2006), have studied the costs and benefits of selected improvements in water supply and sanitation at both global and regional levels. Study results provide evidence to support the further investment in value-for money water supply and sanitation investments. Veerashekharappa (2006) has examined how and to what extent a paradigm shift has taken place in the sharing of costs by the community in the provision of potable water and environmental sanitation through user charges in Karnataka Integrated Rural Water Supply and Sanitation project. The study reveals that, reforms in water and sanitation sector intended to make stakeholders part of the implementation process. Study found that beneficiaries share only partial capital cost and meet 100 per cent of operation and maintenance cost by generating own revenue through user charges. Study suggests that the option left is to partially privatize the operation and maintenance activity for efficient delivery of service.

Poulos et.al. (2007) have attempted to study impact evaluations in the water and sanitation sector. Study found that impacts of such policies and programmes range from greater efficiency in the utilities sector, improved access to higher quality services, health improvements, increased incomes and consumption, social and gender inclusion and education improvements. Hasan (2008) in his study has focused on the financing mechanisms used for the sanitation programme supported by the Pakistan NGO, Orangi Pilot Project–Research and Training Institute (OPP–RTI) in informal settlements in Karachi and other urban centers in Pakistan. The study explains that external agency has an important role to play for finance on sanitation. The study found that this agency is having positive influence on policy and they can provide much-needed funds for experimentation. He concluded that external agencies have financed on sanitation through communities to manage and built their own internal sanitation systems. The study suggested that local governments can also afford to install the external systems as they no longer have to fund the internal components, and as OPP–RTI has helped them develop much lower-cost methods for planning and building trunk sewers.

An attempt made by Ban, Gupta and Rao (2008) was to assess the role of sanitation on rural poor in four Southern States of Andhra Pradesh, Kerala, Karnataka and Tamil Nadu. The study observes that despite efforts to mandate and finance local

governments provision of environmental sanitation services, outcomes remain poor in the villages surveyed in the four South Indian states. The study pointed out the some key issues that appear to hinder improvements in sanitation. World Bank (2010) conducted a study on financing on-site sanitation for the poor in the six countries namely Bangladesh, Ecuador, India, Mozambique, Senegal and Vietnam. The study compares alternative financing approaches based on a set of common indicators, including in terms of the effectiveness in the use of public funds and targeting. The report explains on-site sanitation projects and programmes play a leading role in providing access to sanitation. The report concluded that households are key investors in on-site sanitation, and careful project design and implementation can maximize their involvement, satisfaction, and financial investment.

Ban et.al (2008) conducted study on "The Political Economy of Village sanitation in South India; Capture or Poor Information". The study made an attempt to assess the role of sanitation on rural poor in four Southern States of Andra Pradesh, Kerala, Karnataka and Tamil Nadu. The study reveals that despite efforts to mandate and finance local governments provision of environmental sanitation services, outcomes remain poor in the villages surveyed in the four South Indian States. The analysis indicates some key issues that appear to hinder improvements in sanitation. Local politicians tend to capture sanitary infrastructure and cleaning services for themselves, while also keeping major village roads reasonable well served. The discussions suggest, however, that they neither understand the health benefits of sanitation, nor the negative externalities to their own health if surrounding areas are poorly served. Their finding suggests that improving sanitary outcomes requires disseminating information on the public goods nature and their health benefits, as well as on the local government responsibilities. It also requires putting public health regulations in place, along with measures to enable accountability in service provision.

Water Aid (2008) report on "Feeling the pulse, a study of the total sanitation campaign in five states". This report is the outcome of a study undertaken to understand the principles of what has worked and what has not worked in Total Sanitation Campaign which is the national programme so reforms in rural sanitation launched by the Government of India in 1999. The focus of this study is to draw learning lessons from the implementation experience so far, for improved effectiveness in the future. The study team is immensely grateful to women, men and children of 40 Gram

Panchayats is 20 blocks of 0 districts across 5 states of Bihar, Chhattisgarh, Haryana, Karnataka, and Tripura. Methods used for generating qualitative information included focus group discussion, in-depth interviews and discussions. The report concluded with the result in states and districts where PRIs have been actively involved in TSC, the results have been quicker and more sustainable. Lack of awareness of disaster risks related to floods, droughts, earthquakes, landslides, cyclones and other events and their possible impact on sanitation facilities at the household and community levels women, poor and the marginalized is total sanitation is skewed and undertaken of fairly unequal terms in places visited in Bihar for example, no consultation with the poor dalit communities even in NGP villages had taken place and women were not even aware of the programme.

Sulabh International Academy of Environmental Sanitation (SIAES) (2008) studied on "Disease Burden due to Inadequate Water & Sanitation Facilities in India". The study reveals that, the need and impact of provision of safe water and sanitary excreta disposal facilities towards preventing infectious diseases like diarrhoea, cholera, typhoid, hepatitis etc. The study made a comprehensive review of the global, regional and national as well as state/district level data on water, sanitation and hygiene related diseases burden, including the general progress of public health including the Water Supply and Sanitation services in India on water, sanitation and hygiene related diseases burden, including the general progress of public health including the Water Supply and Sanitation services in India on water, sanitation and hygiene related diseases burden, including the general progress of public health including the Water Supply and Sanitation services in India on water, sanitation and hygiene related diseases burden, including the general progress of public health including the Water Supply and Sanitation services in India and examined the correlation between lack of water safety, sanitation and hygiene and prevalence of related diseases. It also highlights the findings of some case studies carried out in India, which co-relate the burden of infectious diseases with various aspects of water, sanitation and hygiene. It further support the findings the study team conducted two pilot studies in West Bengal, with a rather small sample size was 90. The cases in the Nirmal Grams of Murshidabad and Bankura districts indicated that by providing only toilets, in the individual houses, the disease burden may not reduce substantially. The issue of sustainability and use of toilets, constructed in the so- called Nirmal Grams need also close examination. The study concludes that there is a need of effective advocacy tool for greater cooperation

and coordination between health sector and development sectors like the rural development, urban development and environment, which will result in optimal health benefits from water supply and sanitation programmes in the country.

According to the Report of Asian Development Bank (2009) conducted study on "India's Sanitation for All: How to make it Happen". The study reveals that providing environmentally safe sanitation to millions of people is a significant challenge. The task is very difficult in a country like India, where the introduction of new technologies can often challenge the traditions and beliefs of people.

2.2.4. INSTITUTIONAL ROLE IN SANITATION SECTOR:

A study by Billavaet.al(2020)focused on community participation in sanitation provision and found that, social problems like poverty, unemployment, under education, residential mobility, inadequate housing, and poor health are the main reasons for lack of community participation in rural sanitation programmes. He argues that the community participation has not been a major component of sanitation in developed or industrialized countries compared to developing countries, and can be a very powerful tool in sanitation programme in underdeveloped countries, if it is used properly. Kurup (1991) has studied the impact of Kerala Water Authority launched by both the governments of the Netherlands and Denmark in 1984 on water bodies in North, Central and Southern parts of Kerala State. The analysis reveals that, social and economic aspects should give equal importance in the water and sanitation programme for getting the full support and commitment of the community at every stage of the programmes. This will help a great deal in solving problems connected to selection of sites for public taps or latrines, maintenance, misuse or water management at the local level. In hygiene education and sanitation programmes, the concurrent monitoring and evaluation of the involvement of the community is quite vital. A study conducted in six developing counties (Kenya, Cameroon, Nepal, Pakistan, Guatemala and Colombia) by Lammerink (1998), reveals that without the full involvement and commitment of the community rural sanitation cannot be successfully implemented. The study concluded that the community management of service should be backed by measures to strengthen local institutions in implementing sanitation programmes.

Another study by Veershekharappa (2001) examined the community participation in supervision and monitoring of sanitation, and the study suggested that

NGOs, SHGs and communities should be involved in sanitation programmes. Shiva Ram (2004) examines water and sanitation committees in Arunachal Pradesh and found that these committees are creating intensive awareness especially in operation and maintenance for rural water supply and adoption of sanitation programmes. Author suggests that water and sanitation committees should be constituted in every Gram Panchayat with the help of local NGOs, elected representatives of PRIs and tribal headman for effective operation and maintenance of drinking water supply and sanitation system. Burra, Patel and Kerr (2003) have analyzed the involvement of an alliance of three Indian organizations in community designed, built and managed toilet blocks that now serve more than half a million low income urban dwellers in eight cities in India. The study found that the programme has reached hundreds of thousands of poor urban dwellers with much improved sanitation, water and facilities for washing. They observe that this programme has helped change the relationship between the residents of slums and local government agencies. Further, the study concluded that sanitation has been neglected by Government. Veershekharappa (2004) has examined community participation in water supply and sanitation in Gulbarga district and found lack of people's participation and lack of awareness as main reason for households not having latrines. He suggested that community groups should create awareness about subsidy, health issues and different sanitary schemes in households.

The study on drinking water and sanitation sector of Orissa in India by Mohanty (2005) found that urban and rural drinking water and sanitation projects are facing official obstruction in spending, monitoring progress, creating awareness about the policies. The study presents the programmes were ineffective among poor communities in rural areas. He suggested that people should have sanitary awareness. The study pointed out that proper awareness is necessary to create demand and NGOs must be involved in execution of rural water supply schemes. Without awareness, safe water supply and sanitation programmes cannot sustain both in rural as well as urban areas.

Mavalankar and Shankar (2004) have pointed out that the most vital sector of infrastructure for achieving the goal of health for all is provision of sanitation and drinking water. They explore the importance of sanitation and water supply in terms of health and other benefits. The study attempted to bring out the woeful status of sanitation and water in India and the rate of progress in the sector. The study also analysed the reasons for the poor status of sanitation and its slow progress. The study

suggests that sanitation is as effective in preventing disease as improved water supply. The study inferred that the role of the Panchayats in infrastructure development is limited especially in providing sanitation facility in rural areas. The study concluded water and sanitation are both important; they have stressed sanitation, since it is even more neglected than water.

Veershekarappa (2006) studied the aspect of community contribution in operation and maintenance of environmental sanitation. The study found that sanitation is inextricably linked to presentation of disease and improves the quality of life and thus reduces poverty. He concluded that the village water supply and sanitation committee is ineffective on organization, function, lack of political will, owing to lack of statutory power and inherits most of the demands of the Gram Panchayats. Kanmony (2006) studied rural sanitation in Kanyakumari district and found that local government was not giving proper sanitation facility in rural areas. Panesar and Jurgen (2008) have described the initiatives from the Indo-German Development Co-operation to India's effort to provide sustainable sanitation to all. The study highlighted that the activities of different actors to achieve a common goal and called for accelerating the implementation and the role-out of large scale innovative and peoples driven sustainable sanitation projects. The study examined that paradigm shift towards a holistic view is required to achieve sustainable sanitation. Veerashkharappa and Bhide (2009) have presented that the strategies adopted by NGOs are more effective than that are used by the government in promoting sanitation. The study found that an inadequate sanitation resulted in the spread of communicable diseases causing lot of deaths and disabilities to human resources. Study concluded that India should focus to provision of sanitation as part of Millennium Development Goals with an objective to reduce the number of those without adequate sanitation facilities by half, by the year 2015.

2.2.5. HEALTH HAZARDS FROM POOR SANITATION:

Bijlani and Rao (1990) examined lack of adequate or clean water supply and low level of awareness of user groups towards environmental hygiene are the main reasons of ill health in rural areas. The study pointed out the benefits of improved water supply and sanitation not only reduced the incidence of diseases, but also a remarkable decrease in morbidity with greater life expectancy and an overall promotion of the state of well-being of the population.

Johnstone (1997) examined the relationship between economic inequality and urban environmental quality in developing countries with special reference to provision of water and sanitation services. The study analysed the consequences of dual systems in which the proportion of citizens served by subsidized sewer water and sanitation facilities. The study concluded that i) the poorer households are generally more adversely affected by low level of provision and disease confirmed due to standard project evaluation techniques. ii) The cost structure of providing service means, equal access to a standardized system which is more efficient than the unequal level of access and treatment which exists today. iii) The access to water and sanitation, the means by which the system is financed is the most important and effective means of distribution of resources.

Panda (1997) conducted a study in Bolangir district of Orissa, India in 1989-90 and examined the effects of safe drinking water and sanitation on diarrhoeal diseases among children in rural Orissa. He found that water supply and sanitation conditions directly affected contamination of the household environment and thus resulted in increased incidence of various diseases. The logistic regression model was used to find out the results. Result showed that the per capita income and mother's education had negative effect on occurrence of childhood diarrhoea. He argued that, high level of poverty, low access to safe drinking water and sanitation caused higher rates of diseases and deaths among children. Annette, Fewtrell and Bilthear (2002) have estimated the diseases burden from water, sanitation and hygiene at the global level taking into account various disease outcomes, mainly diarrheal diseases. The study calculated disability adjusted life years index that combines the burden from death and disability in simple index, and permits the comparison of burden from water, sanitation and hygiene with the other risk factor diseases. The study estimated that the disease burden from water, sanitation and hygiene accounted for 4 per cent of all the deaths and 5.7 per cent of the total disease burden occurring worldwide, taking into account diarrheal disease, trachoma, ascariasis and hookworm disease. A study by Bansil (2004) has pointed out that 2.1 million (mostly children) die from diarrheal diseases stemming from lack of access to clean water, inadequate sanitation, and poor hygiene. The study explains that most of the people go for open defecation in rural areas, it is not only an obstacle in maintaining clean environment, but also increasing the number of cases like snake bite, women rape cases, dog bites when children are pooping, etc. The study

found the people spent lot of time in going out for defecation, and going for open defecation is very difficult in rainy season in rural areas. Further the study found that during the rainy season most of the nearby places are filled by water, and the women and old people have to walk long distance to get suitable/privacy place. The study concluded that improper sanitation facility creates lot of problems especially to pregnant and old people.

Pardeshi (2009) conducted the study on "Women in Total Sanitation Campaign: A Case Study from Yavatmal District, Maharashtra, India". The study explored that, it is assumed that a woman's standpoint contributes a great deal to improve planning, functioning and utilization of the sanitary facilities and hence it is recommended to consider the women participation in the process of the implementation of sanitation programs in rural set up.

Sekher and Nazrul (2006) have attempted to explore the importance of sanitation and it's linkage with health status, availability and utilization of sanitation facilities in India. Study analyses were based on available secondary data on sanitation and it was observed that a strong inverse correlation between access to urban water, sewerage connection and the child mortality was noticed. The study concluded that the diarrhoea is significantly less common among children living in households that boil water or use a filter for purification of drinking water than among other children without these facilities. Watson (2006) studied heterogeneous timing of public health investments including sewer connections and septic tanks at U.S. Indian reservations, and found a 10 percentage point increase in the fraction of homes receiving improved sanitation which reduced American Indian infant mortality by 2.5 per cent.

UNDP report (2006) reveals that, India loses most number of lives due to diarrhoea in the world, yet its military spending is more than ten times that of sanitation. According to a report it is pertinent to note that, while the country has made considerable progress on drinking water, it is lagging on the sanitation front as nearly two-third of India has no sanitation access. Moreover, the study found that among 1.8 million diarrhoea deaths in the world, India alone accounted for 4, 50,000. The report also depicts that India has a lower rate of sanitation coverage than Bangladesh. The report showed with numerous case studies from across the countries that show how community mobilisation and good governance can make a difference. Hutton et.al.

(2008) have examined the issues like, health, water, environment, tourism and other welfare impacts associated with poor sanitation in Cambodia, Indonesia, the Philippines and Vietnam. The study was based on evidence from other investigations, surveys and databases. The impact measurement reported in the study focused mainly on a narrow definition of sanitation, human excreta management and related hygiene practices. The study showed an important evidence to support further investment in sanitation in these countries by examining the economic impacts of poor sanitation and the potential gains from improved sanitation. Study results showed that the disaggregate impacts by provincial groupings for each country, as well as providing a rural-urban breakdown and also geographical disaggregation of result is presented for some types of economic impact at the regional level in Cambodia, Philippines and Vietnam, and at the provincial level in Indonesia. Pruss-Ustun, Bos et.al (2008) have analysed the country data of disease burden attributable to unsafe water, inadequate sanitation, insufficient hygiene and inadequate management of water resources. Study highlights how much diseases could be prevented through increased access to safe water and better hygiene. The study provides the burden of certain water and sanitation related diseases like, diarrhoea, malnutrition, intestinal nematode infections, lymphatic filariasis, trachoma, scistosomiasis, malaria and other diseases (dengue and onchocercisis) are described and quantified. The study suggested that further investigation on various factors related to water, sanitation and hygiene which include water hardness, fluoride, and arsenic content of drinking-water and cleanliness of villages.

Bonu and Kim (2009) found that poor sanitation is responsible for the spread of a number of communicable diseases, resulting in lost productivity, reduced quality of life, and improvement. The study used data from National Family Health Surveys (NFHS) and the 60th round of the National Sample Survey. It analysed progress, differentials, correlates, and challenges of sanitation in India. The study examined the significant progress which was achieved in the last decade and the scale of unmet need for sanitation in India. The study had given greater attention on the disadvantaged-households from the poorest quintile and scheduled tribes and the states that have consistently underperformed could help accelerate further progress. Spears (2012) examined effects of rural sanitation on health and human capital in India. The study has used several data sources and several empirical strategies to demonstrate a positive effect of on-site rural sanitation, as implemented by India's Total Sanitation Campaign,

on children's health. Study shows that rural sanitation has an important contribution to make to children's health and that open defecation is a health hazard in rural areas. The study presents a full-scale program implemented by a large government bureaucracy with low administrative capacity. The study found that the mean programme intensity, infant mortality decreased by 4 per 1,000 and children's height increased by 0.2 standard deviations. Study results suggest that, even in the context of governance constraints, incentivizing local leaders to promote technology adoption can be an effective strategy and policy and focused on should be improving rural sanitation.

George (2009) emphasizes on "Nirmal Gram Puraskar: a unique experiment in incentivizing sanitation coverage in rural India" the author wrote in this paper to explore an incentive scheme of the Government of India Nirmal Gram Purskar which was launched by the in 2003. The efforts made under the Total Sanitation Campaign for clean drinking water and proper sanitation facilities for a healthy life. Sanitation coverage in rural India has been growing at an impressive rate since 2001. The Nirmal Gram Puraskar (NGP) is initiated for fully sanitized and open defecation- free Gram Panchayats, Blocks, and Districts. The eligible Gram Panchayats, Blocks and Districts are those that achieve 100 percent sanitation coverage of individual households and 100 percent school sanitation coverage also freedom from open defection and environmental cleanliness.

Mara (2017) conducted study on "The Elimination of Open Defecation and Its Adverse Health Effects: A Moral Imperative for Governments and Development Professionals". This study estimates that there were 965 million people in the world forced to practice open defecation (OD) as per record in the year 2015. The adverse health effects of Open Defecation leads to acute effects i.e. infectious intestinal diseases, including diarrheal diseases which are exacerbated by poor water supplies, sanitation and hygiene; adverse pregnancy outcomes; a life threatening violence against women and girls. Chronic effects include soil transmitted helminthiases, increased anemia, giardiasis, and small intestine bacterial overgrowth and stunting and long term impaired cognition. If open defecation elimination by 2030 is to be accelerated, then a clear understanding is needed of what prevents and what drives the transition from open defecation to using a latrine. Sanitation marketing, behavior change communication, and 'enhanced' community-led total sanitation, supplemented by 'nudging' are the three most likely joint strategies to enable communities both rural and peri-urban to

become completely open defecation free an remain so. It will be a major Sanitation Challenge to achieve the elimination of open defecation by 2030. But, helping the poorest currently plagued by open defecation and its serious adverse health effects should be the principle task as they seek to achieve the sanitation target of the Sustainable Development Goals, indeed it is a moral imperative for all governments and development professionals.

Verma (2017) conducted study on "A Study on the wash practices and the practice open defecation, the factors leading to this practice and its health implications in rural Lacknow". This study reveals that awareness about the importance of various hygiene and sanitation practices on the health of the individuals and also analyzes the burden of open defecation (OD) in the rural setting in Lucknow district and apprehends the various factors lead to the practice of open defecation in the community these are the objectives of the study. Systematic random sampling where the list of all the households in both the villages was obtained from the ASHA and thus using systematic random sampling every 10^{th} household was selected. If the respondent was not available or not willing to participate then the next household was selected. 44 percent of the respondents had primary education. Majoring of respondent's i.e around 57 percent were employed as manual labourers whereas only a small section i.e 16 percent was in farming. Around 64 percent of the male respondents were educated while taking into account the female respondents around 49 percent of the female respondents were educated. 78 percent of the respondents the source of water was government while for the rest the source of water was private and located in the same yard or the house where they were living. 52 of them said they did not do anything to make it safe while 30 percent said that they always treated water to make if safe for drinking while the rest 18 percent said that they did not threat the water regularly. Around 59 percent of the respondents said that they were aware about the relationship. Only around 34 percent of the respondents had a toilet facility in their households while majority of the i.e 66.4 percent did not have any kind of toilet facility in their home. When asked whether the toilet facility was functional or not about 77 percent of the respondents said that the toilet facility was non-functional and it was used for other purposes like storage etc. 60 percent of the cases the respondents said that there was some member in the family who was going out for open defecation. When the reason for going out for open defecation was asked, many themes like unavailability of the toilets, poverty or the lack of the

resource to construct a toilet, old norms of going out in the field and improperly constructed toilets and the feeling of being suffocated inside a toilet were cited out. The most important themes which came to focus in this study were the old social norms and the lack of the resources and poverty in constructing a toilet which was leading to the practice of open defecation. Further it was also seen that in many of the cases even when the respondent had adequate knowledge about the ill effects of open defecation, still they were bound to go for open defecation because they had no other option. Although majority of the respondents were well aware of the importance of maintaining hygiene they were not practicing it due to various constraints like the socio- economic barriers and so on.

Britto et.al (2018) conducted study on "Open Air Defecation: A qualitative approach". This study reveals that India is facing a challenge in controlling open- air defecation (OAD). There are various socio-cultural and behavioral factors that influenced the practice. The objectives of this study are to study the attitude, behavior and practice associated with OAD among individual is Samayapuram area Trichy district, Tamilu Nadu. Qualitative study was done during August 2016. The topic guide comprised questions about OAD and latrines. Focused Group Discussions (FGDs) and in depth interviews were conducted among various group and individuals. Different age groups and gender residing in Samayapuram Trichy District Tamil Nadu was the study population. Five FGDs were conducted among field workers, adult males, adult females and school children (both male and females). Ten in-depth interviews were conducted among school children, adults, the elderly, a medical officer, an executive officer, a sanitary inspector and a sanitary worker. The study showed that people prefer OAD over latrine for the following reasons: economical, habit, comfort, space constraints. They did not prefer community latrines for maintenance constraints such a water scarcity, cleanliness and distance. The issue of Open Air Defecation can be addressed only by strong and continuous motivation of individuals and groups. Any intervention to reduce Open Air Defecation should aim at exploring the unique beliefs, culture, common factors, etc., for it to be effective. The intervention should be highly multidimensional with a special focus on behavior, engineering and legislation.

Dey (2018) conducted study on "Causes and Consequences of Open Defecation and Improper Sanitation: A Study in Polempur Village, Khandaghosh Block, Bardhaman". This study reveals that open air defecation and improper sanitation are the

blazing issues of the present society. In India sanitation is one of the most disregarded sections and because of this negligence people have to pay a massive cost in terms of life. Inadequate and improper sanitation imposes huge economic losses as well as causes various types of environmental pollution. The poor economic condition and lack of proper awareness are the main culprits of open defecation and improper sanitation. An effort has been made to explore the causes and consequences of open defecation and improper sanitation in Polempur village of Khandaghosh block, Bardhaman, West Bengal. This study finds the relationship between open defecation and sanitation related diseases occurrence with the socio-economic condition.

Jena (2018) conducted study on "Effects of Community Sanitation Program on the Awareness of Environmental Sustainability in Assam, India". It reveals that community sanitation is now an essential issue of environmental sustainability. In recently community led total sanitation program is going in Bangladesh, India, Indonesia, Pakistan, Ethiopia and Kenya with the help of government and nongovernmental organization. In this context a community sanitation program was organized in Silchar, India, in which the students, local community members and university professors directly and indirectly participated and gave their valuable feedback. The study aimed to evaluate the effects of community sanitation program on the awareness of environmental sustainability. In this empirical research design 20 university students, 6 university professor, and 14 local people participated in the community sanitation and hands-on activity program organized on the roadside of Silchar Medical College & Hospital and Irongmara Market nearer to the Assam University, Silchar. The participants' response towards the feedback come questionnaire was analyzed by Krushal-Wallis H test resulted significant effects of community sanitation program on the awareness of environmental sustainability.

Sumedh (2018) conducted study on Community-based approaches to tackle open defecation in rural India: Theory, evidence and policies". This study reveals that open defecation as age- old practice in India and impacts the health of individuals as well as their communities. To tackle the problem, the Government of India launched the Swachh Bharat Mission in 2014,aimed at making the country open-defecation free (ODF) by October 2019 by giving more attention to community based approaches. However a while such approaches have helped solve the sanitation riddle in many countries curbing Odin India is much more complicated: the root of the problem is a

combination of lack of sanitation infrastructure and deep-seated habits. So far, India's sanitation policies have used the top-down approach, focusing on financial assistance for latrine construction. While this is necessary, considering the social determinants at play, the emphasis must be on changing collective behavior through participatory methods, a component that has been largely absent from fast policies on sanitation. Demand driven approaches must be adopted, keeping in mind their strengths and weaknesses and ensuring equity-focused actions through community monitored locally appropriate and culturally sensitive interventions.

Yogananth and Bhatnagar (2018) conducted study on "Prevalence of Open Defecation among household with Toilets and Associated Factors in Rural South India: An Analytical Cross-Sectional Study". This study reveals that India's National Sanitation Mission aims to end open defecation by changing social norms and behaviors coupled with financial subsidies to build toilets. An earlier evaluation in the rural Charmapuri district of Tamil Nadu reported poor use of household toilets constructed with government assistance. The objectives of this study to estimate the prevalence of adults with a household toilet practicing open defecation and determine the factors associated with it. Cross-sectional survey in 251 villages of the Dharmapuri district was done and randomly selected households with toilets from the government register. Interviewed one adult member per household with used multiple logistic regressions to determine factors associated with open defecation. 493 respondents, 270 (54.8%[95% confidence interval 50.2 to 59.2]) practiced open defecation despite having a household toilet. Inadequate design and incompletely constructed toilets, poor accessibility and availability of water, preference for open defecation, personal beliefs, socio-cultural behaviors', family dynamics and lack of recognizing the health benefits of toilet use were significantly associated with open defecation. Exposure to government propaganda promoting safe sanitation practices was associated with toilet use. Open defecation is common despite the presence of household toilets in the Dharmapuri district Tamil Nadu. Toilet use is influenced by several structural and social-cultural determinants. The mission needs to shift its emphasis from toilet construction to sustainable functioning and use of toilets.

Gupta et.al (2019) conducted study on "Changes in Open Defecation in Rural North India: 2014-2018". The study reveals that since October 2014 the Government of India has worked towards a goal of eliminating open defecation by 2019 through the

Swachh Bharat Mission (SBM). In June 2014 they reported the results of a survey of rural sanitation behavior in north India. They reported the results from a late 2018 survey that revisited households from the 2014 survey in four states: Bihar, Madhya Pradesh, Rajastan and Uttar Pradesh. Although rural latrine ownership increased considerably over this period, open defecation remains very common in these four states. There is substantial heterogeneity across states in what the SBM did and how. Many survey respondents report that the SBM attempted to coerce latrine construction, including by withholding or threatening to withhold government benefits. ST and SC households were especially likely to face coercion. Variation in SBM coercion is correlated with variation in sanitation outcomes. In village where more people report coercive SBM activities, more people also reported switching to latrine use. These outcomes suggest the need for transparent, fact based public dialogue about the SBM: its costs and benefits, its accomplishments and means.

Kashia and Gangwar (2019) conducted study on "A Study on the Impact of Sanitation Program and its Campaign: With Special Reference to Swachchh Bharat Abhiyan". The study reveals that poor sanitation is the reason for many diseases like diarrhea, cholera, typhoid and many more. According to WHO report in India, around 600 million people are indulging the defecation in the field. It reports that in India, one in tenth deaths is due to poor sanitation hygiene. To overcome this problem the prime minister of India has launched Swachh Bharat Abhiyan, which is an honor to Mahatma Gandhi on his 150th birth anniversary in 2019. There are various factors which hinder proper sanitation awareness about sanitation improper facilities due to lack of finance and cultural disbelieves etc. Swachhh Bharat Mission caters all the factors as in some culture the toilet considered to be impure. Thus they prefer toilet to be outside house at least 20 meter away. This is misconception which has to be removed. The study undertook the Meta analysis of various research papers and official reports of WHO and Swachchh Bharat Mission. This study conducted that there should be a proper check on each stage from the sanction of subsidized amount for the construction of toilet building till it's efficiently used. Safe drinking water should also be provided. Awareness should be provided to the people about their rights. Awareness would be possible only through various media and participatory approach has to be used because of its high effectiveness.

Patil (2019) conducted study on "A Social Network Analysis of Open Defecation Practice in India". This study reveals that India faces a major health issue as it has the highest rate of open defecation in the world. Open defecation is associated with significant negative effects such as diarrhea, parasitic worm infections and stunting. Over the past few decades the Indian government launched multiple campaigns to tackle this issue. Unfortunately the campaigns have achieved limited success in changing the population's open defecation behavior. In 2014, the central government launched the Swachh Bharat Abhiyan (Clean India Mission) with the aim of eliminating open defecation in five years. As of 2018, however 44% of Indians still defecated in the open. As a result it is increasingly important to understand the social and behavioral drivers that motivate open defecation behavior. To study the effects of social networks and social interactions on an individual's open defecation behavior was an aim of this study. Three yearlong research project conducted by Penn Social Norms Group in association with the Bill and Melinda Gates foundation surveyed data was used. A total 3370 respondents were surveyed from two India states Bhihar and Tamil Nadu. The regression analysis shows that visiting religious sites as well as interacting with the village headman increases the likelihood of abstaining from open defecation by approximately 70%. Secondly analyses showed that television and billboard advertisements were particularly effective in reducing open defecation. Finally it attempts to identify potential trendsetters who can be leveraged in future behavior change interventions. Hence the result of the analysis suggest that by harnessing the power of social networks can significantly influence people's behavior and ultimately alleviate the negative outcomes of open defecation in India.

Saleem et.al (2019) conducted study on "Health and Social Impact of Open Defecation on Women: A Systemic Review". This study reveals that the significance of sanitation to safeguard human health is indisputable and has important public health dimensions. Access to sanitation has been essential for human dignity, health and well-being. Despite 15 years of conjunctive efforts under the global action plans like Millennium Development Goals (MDGs,), 2.3 billion people have no access to improved sanitation facilities (flush latrine or pit latrine) an nearly 892 million of the total world's population is still practicing open defecation. The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) was used to frame the review, empirical studies focusing upon open defecation in women aged 13-50 in low

and middle income countries were included in the review. It included in the review were assessed for quality using appropriate critical appraisal tools. Total 9 articles were included in the review; 5 of these related to health effects and 4 related to social effects of open defecation. The review identified 4 overarching themes; Health Impact of open defecation, increased risk of sexual exploitation, Treat to women's privacy and dignity and Psychosocial stressors linked to open defecation, which clearly present a serious situation of poor sanitation in rural communities of Lower-Middle Income Countries. The findings of the review identified that open defecation promotes poor health in women with long-term negative effects on their psychosocial well- being. The health and social needs of women and girls remain largely unmet and often side-lined in circumstances where toilets in homes are not available. Further the research is critically required to comprehend the generalizability of efforts of open defecation on girls and women.

Sinha and Chaudhry (2019) conducted study on "Tackling Open Defecation and Improved Sanitation in Developing Countries: A Toilet Talk from the State of Bihar, India". This study reveals that open defecation is a major stain on India's overall reputation as an emerging economy as it still remains obstinately widespread across rural India. The economic and psychological aspect of toilets construction and their sustainable usage in two districts of the state of Bihar viz Gopalgani and Bhagalpur is presented in the study. Bihar's performance is not up to the mark with respect to the sanitation figures as it was found that household owning a government constructed latrine still defecate in the open. Evidences of the study support a preference for open defecation; several surveys reported that open defecation was more comfortable and desirable than latrine use. Old people prefer going outside as they are used to this routine and do not mind defecating in the open for the rest of their lives. The objectives of this study was to better understand and assess the issues and strategies of behavioral change, policies present in the system an suggesting suitable recommendations to address the issue of sustenance of open defecation free in the state.

Agrawal et.al. (2020) conducted study on "Barriers in Implementation of Sanitation Projects: A Case of Open Defecation Free (ODF) India". This study reveals that despite strong emphasis of government to make India Open Defecation free by 2019 and it is widespread in India. It is equally widespread in the state of Uttar Pradesh. It is known that good health has strong impact on the overall productivity of an

individual. It is also known that good sanitation and hygiene conditions are prior of good health. People are not willing to change their habits and behavior for healthy sanitation practices. Despite repeated efforts of government to change the behavior of people regarding construction and use of toilets, and use of toilets and people are not changing their habits. The report presents evidence from the survey data collected from the rural households of Suriyawan block from Bhikarirampur village of Bhadohi District of Uttar Pradesh. More than 70 percent of the people were interviewed, told that they do not have enough money for constructing toilet because more than 75 percent of the people think that constructing a toilet requires anything between INR 20,000- 30,000. They do not have the idea about the low cost toilets, which they could have easily afforded and used also there is a wide spread belief among people that the low cost twin-pits toilets constructed by the government are inferior quality. Families having working toilet inside home also had at least one member who defecates out in the open. They also found that there are many false beliefs among people about open defecation. They possess the mind-set that open defecation improves their health as they get fresh air and defecate in the open in an open space. Female believes that using household toilets cause headache and sickness. Many household believe that household toilets require more water; therefore it is better to defecate in the open. Male members considered household toilets are for only females. Another important finding was majority of people do not want construct a toilet because they think maintenance and cleanliness of the latrine is a big headache. Findings of this study suggests that stakeholders need to intensify and stress on the behavior change communication strategies to nullify the widespread false beliefs among people regarding toilet use.

Exum et.al (2020) conducted study on "Evaluating the declarations of open defecation free status under the Swachh Bharat ('Clean India') Mission: repeated cross sectional surveys in Rajasthan, India". This study reveals that the most ambitious sanitation campaign to end open defecation in India came to a close on 2 October, 2019. And there are limited independent, robust data to measure its success. To evaluate Rajasthan's claim of open defecation free status in March 2018 under the Swachh Bharat Mission or Clean India Mission by measuring open defecation trends from 2016-2018 was the aim of this study. Publicly available data from Performance Monitoring and Accountability 2020 was used, a representative survey with two stage stratified cluster sampling. Enumeration areas were the primary sampling units selected by the

probability proportional to size method. The repeated cross sectional surveys independently collected household water and sanitation data in Rajasthan. Among household reporting toilet access the data pooled across the four rounds for an observational analysis using logistic regression. The primary outcome measure was regular open defecation among households with access to toilet facilities. Between October 2016 and July 2018 main open defecation practices in rural Rajasthan household decreased from 63.3% to 53.2% and in urban household from 12.6% to 14.7%. Household with regular open defecation occurring despite access a toilet made up 21.7% of rural and 12.1% of Urban Rajasthan as of July 2018. The multivariate logistic regression revealed that factors related to water stress and sanitation sharing was associated with household members' regularly practicing open defecation. These data highlight the importance of a continued focus on constructing toilets that are affordable with low water requirements during the next phase of SBM. An independent survey that can provide robust estimates of Open Defecation is needed to monitor progress of toilet construction and use.

Gauri et.al (2020) conducted study on "Shifting Social Norms to reduce Open Defecation in Rural India". This study reveals that toilet ownership in India has grown in recent years, but open defecation can persist even when rural households own latrines. There are at least two pathways through which social norms inhibit the use of toilets in rural India: 1) beliefs or expectations that others do not use toilets or latrines or find open defecation unacceptable; and 2) beliefs about ritual notions of purity that dissociate latrines from cleanliness. A survey in Uttar Pradesh, India finds a positive correlation between latrine use and social norms at baseline. To confront these, an information campaign was piloted to test the effectiveness of rebranding latrine use and promoting positive social norms. The intervention targeted mental models by rebranding latrine use and associating it with cleanliness and it made information about growing latrine use among latrine owners more salient. The following intervention, open defecation practices went down across all treatment households, with the average latrine use score in treatment villages increasing by up to 11 percent relative to baseline. Large improvements were also observed in pro-latrine beliefs. This study suggest that low cost information campaigns can effectively improve pro-latrine beliefs and practices as well as shift perceptions of why many people still find open defecation acceptable. Measuring social norms as described can help diagnose barriers to reducing

open defecation, contribute to the quality of large scale surveys and make development interventions more sustainable.

Jain and Wangner (2020) conducted study on "Understanding Open Defecation in the Age of Swachh Bharat Abhiyan: Agency, Accountability and anger in Rural Bihar". This study reveals that Swachh Bharat Abhiyan was the India's flagship sanitation intervention program and set out to end open defecation by October 2019. While the programme improved toilet coverage nationally large regional disparities in construction and use remain. Ethnographic methods used for the study to explore perspectives on open defecation and latrine use, the socio-economic and political reasons for these perspectives in rural Bihar. They draw on insights from social epidemiology and political ecology to explore the structural determinants of latrine ownership and use. The researchers have often pointed to rural residents' preference for open defecation and they found that people were aware of its many risks. Also they found that 1) while sanitation research and "behavior change" campaigns often conflate the reluctance to adopt latrines with a preference for open defecation, this a an erroneous conflation; 2) a subsidy can help (some) household to construct latrines but the amount of the subsidy and the manner of its disbursement are key to its usefulness; and 3) widespread resentment towards what many rural residents view as a development bias against rural areas reinforces distrust towards the government overall and its Swachh Bharat Abhiyan funded latrine in particular. These social structural explanations for the slow uptake of sanitation in rural Bihar deserve more attention in sanitation research and promotion efforts.

2.3. STATE LEVEL STUDIES ON SANITATION & DEFECATION; SANITATION & HEALTH; SANITATION &WASTE MANAGEMENT:

As per 2001 Census (GOI) in Karnataka, only 17.4 per cent of rural households were covered by toilet facility as against 6.8 per cent in 1991, while 75.2 per cent urban households had access to toilet facility in the year 2001 as against 62.5 per cent in 1991. It is clear that there is high disparity in access to sanitary facility between urban and rural areas. In 2007, the household sanitation coverage of Karnataka was 22.19 per cent. Districts like Gulabarga, Koppal, Bijapur, Raichur, Hasan, Bagalkot, Belgaum, Chitradurga, Haveri, Mandya, Uttarkannada, Dharwad, Bellary, Davangare, Chamaraj Nagar, Gadag, Bidar and Mysore were having less coverage of latrine facility

compared to state level. On the other hand Kolar, Bangalore Rural, Tumakur, Chikmagalur, Bangalore, Udupi, Shimoga, Kodagu and Dakshina Kannada are advanced in household sanitation coverage. Dakshina Kannada had the highest household sanitation coverage at 64.1 per cent and Gulabarga had lowest household sanitation coverage accounting for 3.0 per cent among all districts in Karnataka (GOI 2009). Another study by Veershekarappa's study (2006) revealed that only 21 per cent of rural household actually had access to sanitation, and the study found that more than 80 per cent of households did not have toilet facility in relatively poor states like Orissa, Chattisgarh, Jharkhanda, and Bihar. But in Kerala about 84 per cent of the households have toilets attached to their houses. According to Census 2011 individual household latrine coverage has increased from 36.4 per cent in 2001 to 46.7 per cent in 2011. Census also presented data stating that only 30.7 per cent of rural households have access to sanitation but at the same time more than 63 per cent have access to mobile phone in the rural areas. However, the percentage of households having access to sanitary and basic hygiene has slowly increased in India in the last 40 years.

Veerashkharappa and Bhide (2009) conducted study on "Sanitation Strategies in Karnataka: A Review". The study reveals that the strategies adopted by NGOs are more effective than that are used by the government in promoting sanitation. Inadequate sanitation resulted in the spread of communicable disease causing lot of deaths and disabilities to human resources. In the light of the emergency, the international community has included provision of sanitation as part of Millennium Development Goals (MDGs) with an objective to reduce the number of those without adequate sanitation facilities by half the year 2015. The study examined strategies to provide toilets, the constraints in generating demand for toilets, stakeholder's role and impact in providing sanitary services. Secondary data were used from Census and NSSO rounds. The factors influencing the adoption of toilets are lack of space, closely built clusters of houses, non-affordability amongst poor people, unsuitability of site due to rocky area and water-logging, reluctance of people to have toilet within the household and scarcity of water. The study concludes that the variation across the households in deriving benefits from the programme depends on the design of the project and awareness of the household. The study finds that the demand for sanitation is very insignificant whenever the provision of sanitation services were linked with community contribution and private household connection for water.

Types of Latrine Facility:

Saleth and Shastry (2004) have studied water supply and sanitation sector of Karnataka during the period 1990-2001. The study shows that about 25 per cent of the population in Karnataka was not having access to adequate and safe drinking water and 75 per cent of the rural populations still did not have access to sanitary latrine and basic hygiene. Remarkably, only 2 per cent of rural population use modern latrine facility in Karnataka. They pointed out the positive spill over effects on the sanitation sector from interventions in other sectors such as watershed development and democratic decentralization. According to the census of 2011 only 19.4 per cent are having water closet (according to WHO this is an improved sanitation facility) and 10.5 per cent of rural households are having pit latrine facility.

Priority to Sanitation Sector:

Kolavalli and Raju (2003) attempted to study the safe drinking water sources and Sanitation at Ghataprabha sub basin of Karnataka. The study observed that only less than 10 per cent of total villages had toilet facility, and sanitation often receives less priority than drinking water supply. The United Nations Report (2010) has highlighted a crude fact that more Indians have access to cell phones than to a toilet and basic sanitation. It is a tragedy to think in India, a country now wealthy enough that roughly 70 per cent of the people own phones but about half cannot afford even the basic necessity and dignity of a toilet. The report concluded that the education about the adverse effect on health due to poor sanitation is essential to make changes. The report is produced by experts who prescribe ways to meet the Millennium Development Goal (MDG) on sanitation by 2015. Report further explains the state Mumbai had experimented with mobile toilets but, though this was a good idea, activists say that poor scheduling, poor maintenance and lack of access to sewer lines have made them ineffective.

Veershekharappa (2004) studied the accessibility of sanitation in Gulbarga district and author found that lack of finance, space, and lack of awareness are the main reasons for households for not having latrine. Slob (2005) has pointed out that, excreta transport activities are very limited and because of space restrictions reuse on-site is not always possible in urban areas. According to the study, the Integrated Sustainable Waste Management concept served as the framework for the development of the criteria

for a good transport system. The study concludes that for urine collection, collection with a tractor trolley combination equipped with a pump is the most effective and efficient system for large- scale collection.

UNDP (2006) Report also explained the sanitation index of Karnataka and submits that it is as very poor i.e., two per cent when the campaign was launched in 2004, but is now a healthy one accounting for 38 per cent. Although, this is lower than the national average of 45 per cent, it is a positive achievement as per UNICEF report and the jump from 2 to 45 per cent in sanitation index is very impressive; the index in literate i.e. Dakshina Kannada accounted for 90 per cent. The report clearly indicates that when there is a combination of government policies, community initiative along-side of Government officials to implement schemes effectively and efficiently then there transforming human lives, especially in rural areas for better. Another study shows only 21.3 per cent of rural households are covered with latrine facility in rural Dharwad out of which 66.0 per cent of households are using latrine facility (Billava and Nayak, 2012).

2.4. FINDINGS OF LITERATURE REVIEW:

The review of literature shows that very few of studies have been conducted compared to the magnitude of the problems of sanitation. Some studies have focused on the coverage of sanitation and their analysis is only restricted to coverage of toilets. The other aspects of sanitation, such as provision of bathroom, personal hygiene and utilization of toilet, etc, have not been covered. The role of different financial institutions, such as Central Government, State Government, Panchayat bodies, external agencies and NGO also needs to be systematically analysed. Some studies highlight the importance of local people, but the extent of people's participation in Gram Sabha/Ward Sabha and enquiring about the steps taken to solve the problems, etc., needs to be studied. The literature review further shows that only few micro level studies have been conducted on issues related to prevalence of sanitation related diseases. Therefore, a systematic study needs to be conducted to understand present status of sanitation, utilization of individual latrine, community participation in the rural sanitation and impact of improved sanitation facility on living standard of households in rural areas.

Open defecation is widely practiced in India. To improve sanitation and promote better health, the Government of India (GOI) has instituted large scale sanitation programmes supporting construction of public and institutional toilets and extending financial subsidies for poor families in rural areas for building individual household latrines. Nevertheless, many household latrines in rural India, built with government subsidies and the facilitation and support of non-government organizations (NGO), remain unused. Literature on social, cultural and behavioural aspects that constrain latrine adoption and use in rural India is limited.

The researcher while making extensive effort through review of literatures, journals, case studies, national and international reports, and subsequent visit to villages and government departments have come across various information and the general findings are imperative to understand advantages and disadvantages of sanitation in the rural context. Human exposure can come from consuming the contaminated water or eating foods that are washed or irrigated with the polluted water. Children are more susceptible to these diseases which frequently lead to diarrhoea. Once a child becomes infected and begins diarrhoea it becomes difficult for them to absorb need nutrients in the food that they consume. The inability of their bodies to adequately absorb the food that they eat may eventually lead to malnutrition, stunting, and even death.

There are two huge obstacles to eliminating the practice of open defecation. If India is eventually able to solve these problems however the incidences of disease related malnutrition will decrease dramatically. First, it is culturally acceptable. Many Indians have grown up in an environment where everyone does it. Defecating in the open is frequently considered good and healthy among rural areas. The second major problem is lack of latrines and infrastructure. Due to the caste system, this becomes an issue due to the touching of excrement is associated with only the lowest caste. Eliminating the practice of open defecation will not occur until both problems are solved. To eliminate these problems, education and changing the social acceptability of open defecation should be a priority. The second factor is considering the types of toilets available and finding one that is acceptable to the people. Currently, the government of India and Government of Karnataka is attempting to do these two things with limited success.

The government of India claimed that there is 100% coverage of sanitation in rural areas. Unfortunately, most are not utilized by the villagers. Several surveys indicated that many Indians don't want to use the pit or latrine type toilets provided by the government because they fear the stigma attached to cleaning it. Two initiatives that the government is employing is the paying of a cash incentive to the village councils to enforce toilet use. There is also a campaign encouraging women to not marry a man unless his village has a toilet. These have had limited success. Unless the village is monitored closely they frequently go back to open defecation. The marriage campaign created the view that toilets were for women only. Due to the cost of building infrastructure, sewage treatment facilities are not being constructed in rural areas, so the dilemma of who will clean the toilet facilities needs to be addressed.

Findings shows that providing infrastructure does not ensure use when there are significant and culturally engrained behavioural barriers to using latrines. Future sanitation programmes in rural India need to focus on understanding and addressing these behavioural barriers.

Literature finds that the absence of latrine infrastructure is not a primary factor for continued open defecation and that toilet building alone will not address the widespread problem of open defecation in rural India. Poor quality and an inappropriate and single latrine design made available to rural people under government sanitation schemes may be important factors but are not the sole reason for low latrine uptake and use. There are other behavioural aspects which constrain the adoption and use of latrines. These behavioural aspects vary with communities, across gender and different age groups and castes. Any future sanitation intervention, instead of achieving targets, needs to consider these aspects and approach the issue of sanitation behaviour change holistically.

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CHAPTER – 3

METHODOLOGY OF THE STUDY

3.1. Introduction

3.2. Rationale

3.3. Area Of the Study

3.4. Brief Profile of Karnataka

3.5. Profile Of the Vijayapura District

3.6. Objective of the Study

3.7. Database And Methodology

3.8. Selection Of the Research Design

3.9. Sampling Framework

3.10. Collection Of Data

3.11. Preparation Of the Interview Schedule

3.12. Quantitative Data Tabulation

3.13. Data Cleaning

3.14. Data Analysis

3.15. Limitations of the study

3.16. Organization of the Chapter Schemes

References

3.1. INTRODUCTION:

The current chapter gives a detailed account of one of the key components of the research process, that is, research methodology while elaborating upon the research methods adopted by the present study, selection of the research design, rationale for selection of the study sites, sampling procedure, sample size, types of data used by the present study, sources, quantitative and qualitative methods of data collection and analysis.

3.2. RATIONALE:

Sanitation is considered to be fundamental to human health (WHO, 2014). Yet many people, especially those in low-resource settings, have no access to sanitation. Among an estimated 946 million who practice open defecation, nine in ten of those reside in rural settings (WHO-UNICEF, 2015a, WHO-UNICEF, 2015b). Almost 60% of the world's open defecators live in India, most in rural settings (Planning Commission, 2013, WHO-UNICEF, 2014a).

By 2016, the Central Indian government's sanitation programs have already been operational for more than three decades (Planning Commission, 2013). The Total Sanitation Campaign (TSC)—the version of the program which is investigated here—was launched in 1999 as part of a comprehensive program aimed to accelerate sanitation coverage in rural areas and make India open defecation free (ODF or 'Nirmal Bharat') by 2017. It focused primarily on the construction of individual household pit latrines. The TSC was designed as a "demand-driven, community-led", "low to no subsidy" approach to total sanitation and was implemented by the state governments (DDWS, 2011).

In the decade of the TSC through March 2010, 64.3 million individual household latrines were reportedly constructed, including 34.8 million latrines in below poverty line households (WSP, 2011). However, a review of the TSC commissioned by the Government of India (GoI) suggested that as many as 72.63% households in rural India practice open defecation even though they have access to latrines (Planning Commission, 2013). This estimate, although higher than others (WHO-UNICEF, 2014a) reveals that latrine access does not always translate into use (National Sample

Survey Office, December 2013; Sanan and Moulik, 2007, WSP, 2011). It offers insights into likely reasons for open defecation, even among households that have latrines, including that it is "an established age old practice" with little or no stigma attached to it (Coffey et al., 2014, Ghosh and Cairncross, 2014; Planning Commission, 2013), and generally low awareness of the benefits of hygiene (Banerjee and Mandal, 2011, Planning Commission, 2013). Finally, the scale of the problem reflects certain implementation and program service delivery issues that require strengthening (Ghosh and Cairncross, 2014, WSP, 2011). From a monitoring perspective, it implies that the focus should also be on latrine use rather than only on access and coverage.

Similarly, the Indian government's routine monitoring system for the rural sanitation sector is limited to periodic tracking of inputs (budget spent) and outputs (latrines constructed). It does not track actual use of latrines (Ganguly, 2008, Planning Commission, 2013, WSP, 2013). Outcomes such as ODF communities are monitored to a limited extent through the "Nirmal Gram Puraskar" (NGP or Clean Village Prize) verification process but latrine use data is not available in the public domain and there is little effort to track sustainability in NGP-winning local governments (WSP, 2013). As a result, implementers are incentivized to prioritize latrine construction over use or sustainable behavior change (Wicken, 2008, WSP, 2013). The consequence, according to some experts, is that the program has been reduced to "a no-gain toilet construction scheme….where India built millions of toilets but people (did) not use them" (Jitendra et al., 16–31 January 2014).

Ensuring that populations with access to latrines actually use them requires an insight into the determinants of use (O'Reilly and Louis, 2014, Pattanayak et al., 2009). Research into the successful adoption and sustained use of latrines has revealed a range of factors that may potentially influence use, with health considerations only playing a minor role (Jenkins and Cairncross, 2010, Mara et al., 2010). Research suggests that latrine adoption may be motivated by a "prestige, well-being or situational drive"and that it may vary with gender, age, occupation, life-stage, travel experience, education, wealth and income, and the physical and social geography of the village environment with reference to the availability of good defecation sites around the home and/or villages (Jenkins and Cairncross, 2010, Jenkins and Curtis, 2005). Factors such as family size (O'Loughlin et al., 2006), privacy and safety for women and girls (Arnold et al., 2010), socio-economic status of the household and female literacy rates

(Ghosh and Cairncross, 2014) may be associated with latrine use. Evidence also suggests that a preference for open defecation even among latrine owning households, especially those that received government subsidies for latrine construction versus those that did not (Coffey et al., 2014, Routray et al., 2015), may be a determinant of latrine use. Additional determinants of use may include social cohesion and peer influence (Crocker et al., 2016, Shakya et al., 2014) and access to water, supply-related and structural issues related to latrine construction (Barnard et al., 2013; ICRA, April 2011; Jenkins et al., 2014).

Measuring latrine use, at both household and individual levels, is challenging and a robust indicator for the same is not yet readily available for integration into large-scale household surveys (Bartram et al., 2014, Coffey and Spears, 2014). Despite certain limitations (Curtis et al., 1993, Schmidt and Cairncross, 2009, Zwane et al., 2011), self-report measures, such as a diary or survey, are popular measures of behaviour assessment at both household and individual levels. Based on the results of a previously published study (Sinha et al., 2016), which compared various categories of reported latrine use and corresponding sensor-based latrine events, a reported latrine use measure of recall over the previous 48 h has been considered in this study.

With a special emphasis on rural cleanliness, the centrally sponsored scheme Sampoorna Swachhta Andolan was implemented intensively in all the 30 districts of the state from 2005 to 2012. The same scheme was remained as a Nirmal Bharat Abhiyan programme was vigorously implemented in all the 30 districts of the state from April 2012 to October 2, 2014. Presently, the central government has renamed the same Nirmal Bharat Abhiyan programme and is being implemented under the name of Swachh Bharat Mission (Gramin) with a new form with effect from 02.10.2014.Presently, the central government has renamed the same Nirmal Bharat Abhiyan programme and is being implemented under the name of Swachha Bharat Mission (Gramin) with a new form with effect from 02.10.2014.

In all families in rural areas, schools, anganwadis should have toilets, toilets should be used for defecation and urine, there should be good maintenance, the streets and lanes of the village should be clean, besides the houses and village garbage, used water, etc. should be maintained well. Under the Swachha Bharat Mission (Gramin),

activities are being undertaken to ensure complete cleanliness of all the villages in the state.

SWACHHA BHARAT MISSION (RURAL):

Karnataka has been the forerunner in putting forth concerted efforts to implement total sanitation in the rural parts of the State. The State has been implementing a number of sanitation programmes right from 1985, with the assistance of Central Government and external agencies like Danida, Royal Netherlands, World Bank, UNICEF and other development partners. With a view to give special emphasis to rural sanitation, "Nirmal Grama Yojane" has become operational in 1995 and was implemented for 8 years. Afterwards the Centrally sponsored scheme of "Total Sanitation Campaign" was in operation from 2005 to 2012 and this scheme was renamed as Nirmal Bharat Abhiyan from 1st April 2012 and it was again rechristened as "Swachh Bharat Mission" with effect from 2nd October 2014.

3.3. AREA OF THE STUDY:

According to the Census of 2001, only 21.9 per cent of rural households had toilets in India. After a decade, the percentage of households increased to 30.7 per cent i.e. an increase of less than 10 per cent. Kerala, Manipur, Mizoram and Sikkim are ahead of the rest on rural toilet ownership and Himachal Pradesh, Punjab, Sikkim and Goa have improved the most in toilet ownership between 2001 and 2011. It is also interesting to note that relatively well-off states like Tamil Nadu and Karnataka actually fall below the national average, with Andhra Pradesh barely doing better. To really understand the problems in achieving the sanitation coverage, we have selected Karnataka state for the study. Whereas Government of India has reported that there is 100% achievement under Swatch Bharat/ Nirmal Bharat Abhiyan where it has declare India as defecation free country (GoI report, 2021).

Considering the amount of work being done to ensuring the sanitation facilities in rural communities, this study is trying to understand the perception of the village households to gaze their level of knowledge and information for optimal utilization of the toilets being constructed. Accessibility to sanitation as reported by Govt. of India is not concern as it the total coverage has peaked to 100% but question remains on the part of utilization of sanitation facility. Thus this study primarily focuses

on to understand a) the sanitation facility at household level b) the level knowledge among people c) the level utilization.

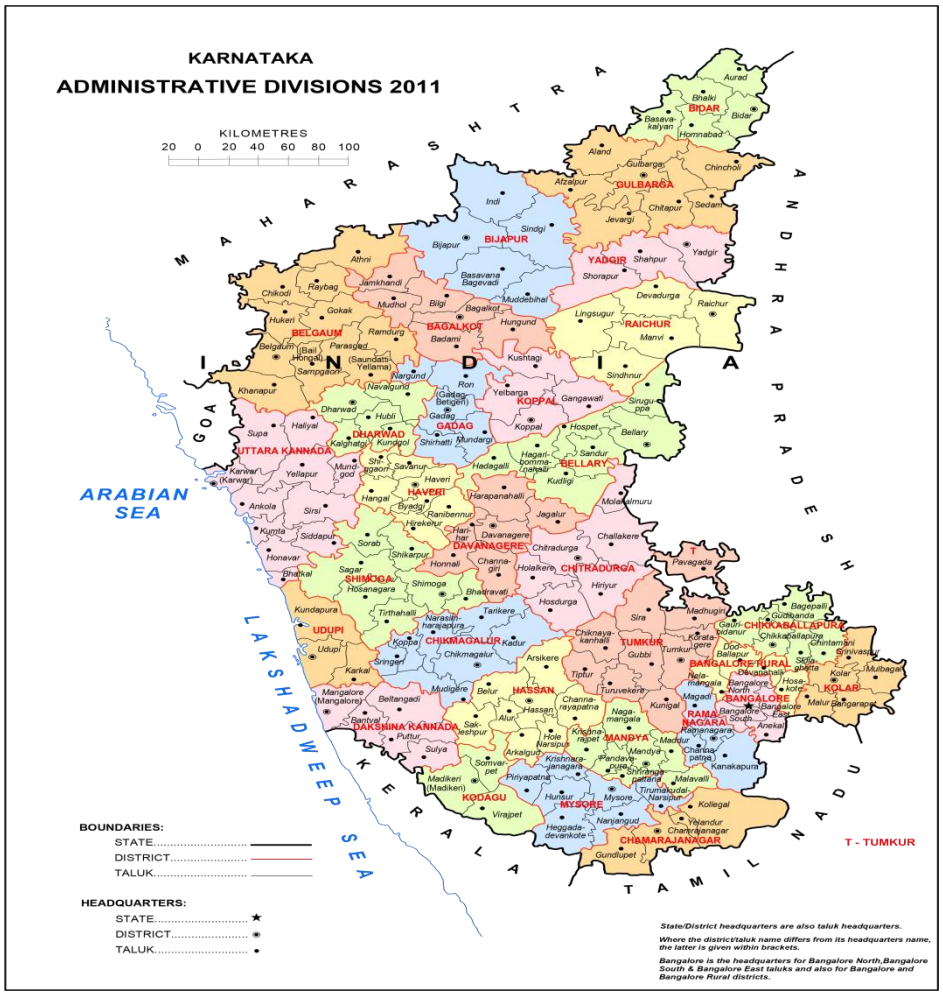
3.4. BRIEF PROFILE OF KARNATAKA:

Karnataka is situated in the south western region of India. It is one of the most prosperous states in India. Karnataka has made tremendous progress in the fields of education, industry, agriculture, literature and tourism. Bengaluru is the capital of Karnataka. Bengaluru is known as the Silicon Valley of Asia due to its flourishing Information Technology industry.

Karnataka ranks ninth in terms of population in India. The population density of the state is 319 per sq. km. The decadal growth rate of Karnataka's population is 15.7%. Karnataka's population was recorded as 61.13 million as per 2011 Census of India. Out of this, 61.43% reside in the rural areas. The sex ratio for the state is 973 which is higher than the all-India average of 940. The sex ratio for rural Karnataka is 979 while for urban Karnataka it is 963. The child sex ratio for Karnataka stands at 948. This figure is again higher than the national average of 914. The overall literacy rate for the state of Karnataka is 75.4%. The male literacy rate is 82.47%. The female literacy rate stands at 68.08%.

The state is delineated into 30 districts and 176 taluks spread over 27,481 villages. In Karnataka, agriculture is the major occupation for a majority of the rural population. As per the population Census 2011, agriculture supports 13.74 million workers, of which 23.61 per cent are cultivators and 25.67 per cent agricultural workers. A total of 123,100 km² of land is cultivated in Karnataka constituting 64.6% of the total geographical area of the state. The agricultural sector of Karnataka is characterized by vast steppes of droughtprone region and sporadic patches of irrigated area. Thus, a large portion of agricultural land in the state is exposed to the vagaries of monsoon with severe agro-climatic and resource constraints. Agriculture employs more than 60 per cent of Karnataka's workforce.

Map-1 Administrative Division of Karnataka_ 2011



Source: Karnataka Informatics centre, GoK, 2019

SELECTION OF DISTRICT:

For this research study Bijapura (now it is been renamed as Vijayapura) district is selected. The driving focus of selecting this district as it this district considered to be one of the backward districts in terms of socio-economic condition, regional imbalances, low education status and low level of health condition comparing with health & hygiene aspect and be it in the health infrastructure development.

3.5. PROFILE OF THE VIJAYAPURA DISTRICT:

Vijayapura is a border district of Karnataka state. Its earlier named was Bijapur and in 2014 it was renamed as Vijayapura. It is well known for the great monuments of historical importance built during the Adil Shahi dynasty. The foundation of this historic city was laid during the reign of the Chalukyan dynasty of Kalyani between the 10th and 11th centuries. They called it Vijayapura or the City of Victory. The list of five tehsils/blocks in Vijayapura district is as follows Bagewadi,

Vijayapura, Indi, Muddebihal and Sindgi. There are 692 villages, 679 inhabited, 13 uninhabited and six statutory towns in the district.

Source: Karnataka Informatics centre, GoK, 2019

DEMOGRAPHY:

As per Census 2011, the total population of Vijayapura is 2,177,331. Out of which 1,111,022 were males and 1,066,309 were females. This gives a sex ratio of 960 females per 1000 males. The percentage of urban population in Vijayapura is 23.05 percent, which is lower than the state average of 38.6 percent. The decadal growth rate of population in Karnataka is 15.60 percent, while Vijayapura reports a 20.5 percent decadal increase in the population. The decadal growth rate of urban population in Karnataka is 4.58 percent, while Vijayapura reports at 1.1 percent. The district population density is 207 in 2011, which has increased from 172 since 2001. The Scheduled Caste population in the district is 20.3 percent while Scheduled Tribe comprises 1.8 percent of the population.

Table No 3.1. Snapshot of demographic profile of the district

Sl No	Demographic Label	Value
1.	Area	12,805 Sq Km
2.	No. of Revenue Divisions	2
3.	No. of erstwhile Taluks	5
4.	No. of Hoblies	20
5.	No. of Gram Panchayats	213
6.	No. of Villages	692
	Total Population	21,77,331

Source :District Administration© Vijayapura , Developed and hosted by National Informatics Centre, Ministry of Electronics & Information Technology, Government of India

Table 3.2 Detailed profile of Vijayapura district

S.No.	Profile Name	Profile Value
1.	Total Rural Population (Male)	857562
2.	Total Rural Population (Female)	817791
3.	Total Rural Population	1675353
4.	Total SC Population (Male)	226440
5.	Total SC Population (Female)	216333
6.	Total ST Population (Male)	19912
7.	Total ST Population (Female)	19400
8.	No of Taluk Panchayats	5
9.	No of Gram Panchayats	213
10.	No of Villages	660
11.	No of Habitations	426
12.	Total Forest Area (in Sq. Kms)	108.05
13.	Total Agricultural Area (in Sq. Kms)	9350
14.	Total Horticultural Area (in Sq. Kms)	470.62
15.	Major Agricultural Crops	Jowar, wheat, sugarcane, togari, chana and maize
16.	Major Horticultural Crops	Lemon, pomegranate, grapes, kanakambara, jasmine, sevantige, rose, aster, betel leaf, turmeric, garlic, dry chillies.
17.	Major Industries	Agro& Food and Cotton textile
18.	Major Irrigational Canals	Upper Krishna Project
19.	Total Schools (Primary)	2708

20.	Total Schools (High Schools)	521
21.	Total Colleges	207
22.	Total Professional Colleges	14
23.	Total Anganwadis	2106

Source: Vijayapura district web portal &National Informatics Centre, Bangalore (accessed, Jan 2022)

TOPOGRAPHY:

Geographically, the district lies in the tract of the Deccan Plateau The lands of the district can be broadly divided into three zones: the northern belt consisting of the northern parts of Vijayapura Taluks of Indi and Sindagi; the central belt consisting of Vijayapura city; the southern belt consisting of the rich alluvial plains of the Krishna Rivers parted from the central belt by a stretch of barren Trap. The northern belt is a succession of low rolling uplands without much vegetation, gently rounded and falling into intermediate narrow valleys. The upland soil being shallow, the villagers are generally confined to the banks of the streams and are far away from one another

SOCIO-ECONOMIC PROFILE:

The three sectors of the economy – primary, secondary and tertiary – reflect the direction of growth of any region[9]. In Vijayapura the tertiary (services) sector contributed the maximum share of 52 percent to Gross District Domestic Product (GDDP) which is lower than that of Karnataka's share of 60 percent to GSDP in 2013-14. The district's primary (agricultural) sector contributes about 1/4th to GDDP (26 percent) while the secondary sector's contribution is 22 percent. The GDDP of Vijayapura in primary sector is almost double compared to that in Karnataka. On considering Net District Domestic Product (NDDP), Vijayapura has 26.1 percent of share in the primary sector, 21.04 percent secondary sector share, while 52.86 percent of the income comes from the tertiary sector. Karnataka, as a state, gets 14.25 percent of its output (NSDP) from the primary sector, a quarter from the secondary sector (24.5 percent); but is certainly led by the tertiary sector (61.3 percent). The district's share in

[9]Directorate of Economics and Statistics, Govt. of Karnataka

NDDP to the primary sector is higher than that of the state and secondary sector land tertiary lag behind that of the state.

The per capita income or average income measures the average income earned per person in a given area in a specified year. Vijayapura's per capita income (Rs.71,482) is less than that of the state (Rs.126976). Low per capita income is usually an indicator of poverty in a region. Figures drawn from the Economic Survey of Karnataka 2013-14 shows that the incidence of poverty (2011-12) in urban areas is 28.5 percent where as in rural areas is 21.4 percent in the district of Vijayapura. The overall incidence of poverty (2011-12) in the district is 23.1 percent remains slightly higher than the state level (21%). Low per capita income of Vijayapura might be a probable explanation to the high incidence of poverty in the district.

3.6. Objective of the Study:

1. To study the profile of the TSC of Vijayapura District
2. To understand the implementation strategies of TSC in PRI levels
3. To examine the impact of TSC in rural areas households, Schools and Anganawadis
4. To motivate communities and Panchayat Raj Institutions promoting sustainable sanitation facilities through awareness creation and health education

3.7. DATA-BASE AND METHODOLOGY:

Research is an original contribution to the existing stock of knowledge through observation, comparison and experiment. Its purpose is to seek answers to questions with the use of scientific procedures and to find out the hidden truth which is yet to be discovered (Kothari, 2004, p. 1-2). Research methodology is one of the most important components of a research which refers to the systematic procedures adopted for the scientific examination of a research problem, while also explaining the rationale for their selection (Kothari, 2004, p. 8)[10].

This is an analytical and statistical study. For the analytical part, it analyses performance of the Total Sanitation Campaign. Most of the literature was collected from books, journals and articles for the content analysis method from different

[10] Kothari, C.R. (2004) Sample Size Determination. Research Methodology. New Age International Publications, Vol. 1, 74-81.

libraries and electronic sources. For the statistical part, the design of this study is explorative in nature and the purposive/ simple random sampling method is used to select households and villages in random selection method. The research is descriptive and analytical in nature to the extent that it seeks to analyse the impact of Total Sanitation Campaign (TSC) in Bijapura district of Karnataka state to identify the effectiveness, advantages and usage-utilization of sanitation.

3.8. SELECTION OF THE RESEARCH DESIGN:

Any research is bound to fail without selection of an appropriate research design as it has a direct bearing on the reliability of the results. An erroneous framework can produce misleading conclusions. The selection of the research design is done keeping in mind the purpose and objectives of the study. In simple words, the research design is the blueprint or outline of the research methods, selection of the field area, sampling, types of data required, methods and tools of data collection and analysis required to conduct the investigation.

In view of the nature, scope and purpose of the present study, the triangulation mixed methods design was chosen. Almalki (2016) pointed out that the triangulation design seeks to gather complementary yet distinctly different quantitative and qualitative data on the same topic which can later be integrated for analysis and interpretation of the results. Hence, the researcher was adopted Descriptive research design for present study.

3.9. SAMPLING FRAMEWORK:

The preparation of the final survey is followed by selecting the samples to carry out primary survey. There are various sampling methods used in the research. They include random sampling, stratified random sampling, quota sampling, snowball sampling, systematic sampling etc. In this study, the respondents have been selected through stratified random sampling. The selection of the field area, also known as the study site, is an important step in any research. Morse and Field (1996)[11] recommended the selection of a field location where a researcher can gain maximum understanding about his research problem and get the best chances to observe and learn about his

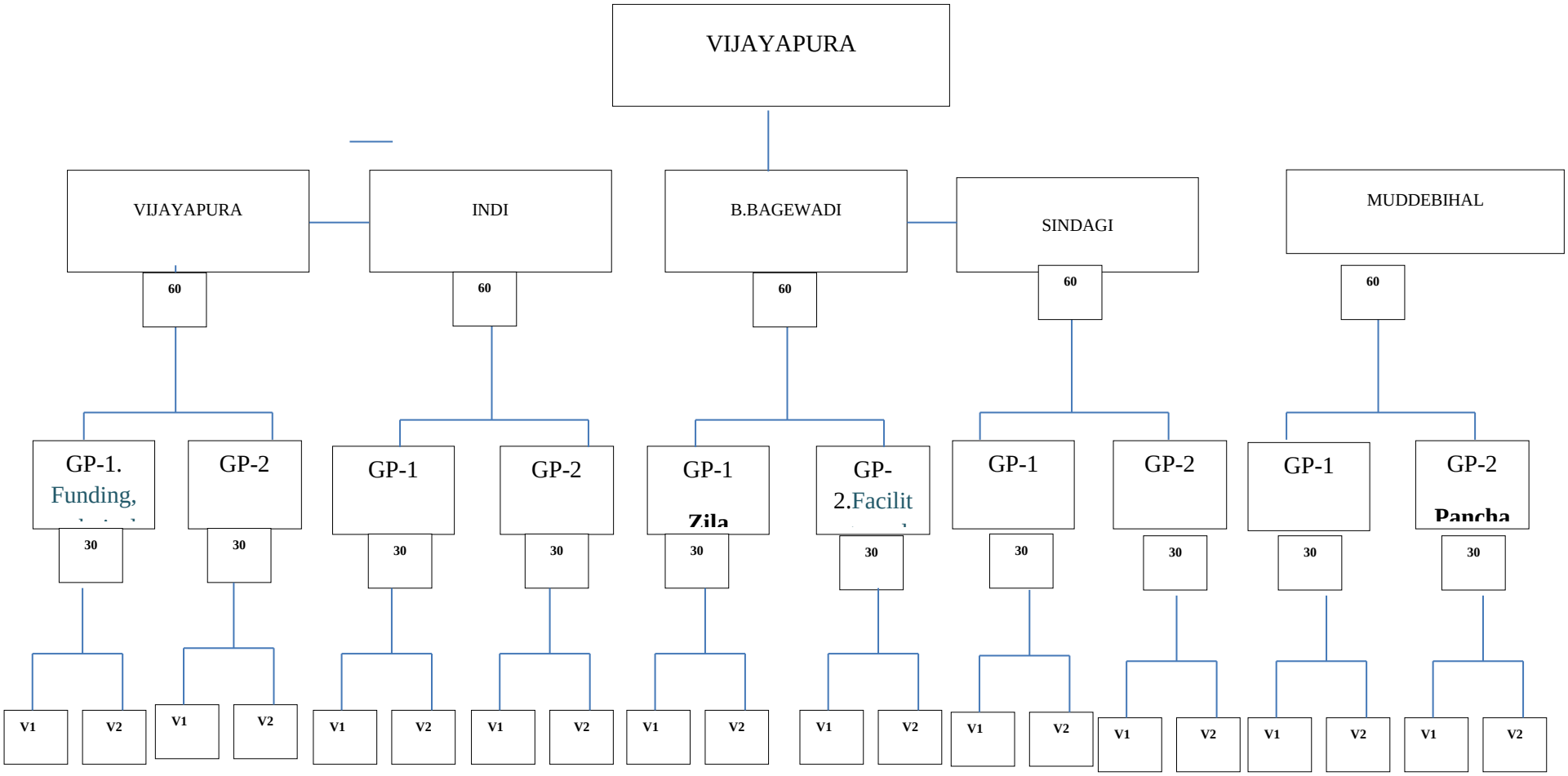
[11] Janice M. Morse & Peggy Anne Field (1996) The purpose of qualitative research; Nursing Research, 1996
ISBN : 978-0-412-60510-9

subjects. Also, the study site should be fairly accessible. A sample design is a systematic procedure adopted by the researcher to obtain a sample from a given population and deciding upon its size and rationale for selection. The main steps involved in a sampling design include defining the universe to be studied, which could be finite or infinite, a sampling unit, preparing a source list, also known as the sampling frame from which a sample is drawn, and finally, selecting the sample size (Kothari, 2004, p. 5).The present study was adopted purpose sampling design.

Sample Design and Sample Size:

Sl No	**Taluka / Block**	**Total Sample size**	**No. of Respondents from each GP selected from each Taluka**	**No. of village and Respondents covered each GP**
1	Vijayapura	60	2 GPs (30 X 2 GP)	4 villages 15 X 4 Village
2	Indi	60	2 GPs (30 X 2 GP)	4 villages 15 X 4 Village
3	Sindagi	60	2 GPs (30 X 2 GP)	4 villages 15 X 4 Village
4	Basavana Bagewadi	60	2 GPs (30 X 2 GP)	4 villages 15 X 4 Village
5	Mudddebihal	60	2 GPs (30 X 2 GP)	4 villages 15 X 4 Village
	Total	**300**	**10 GPs(30 x 10GPs)**	**15 x 20 villages**

Sample Design



3.10. COLLECTION OF DATA:

Data collection plays a very crucial role in the statistical analysis. In research, there are different methods used to gather information, all of which fall into two categories, i.e. primary data, and secondary data. As the name suggests, primary data is one which is collected for the first time by the researcher while secondary data is the data already collected or produced by others. Regardless of the field of study or preference for defining data (quantitative or qualitative), accurate data collection is essential to maintain the integrity of research. Both the selection of appropriate data collection instruments (existing, modified, or newly developed) and clearly delineated instructions for their correct use reduce the likelihood of errors occurring.

There are many differences between primary and secondary data, but the most important difference is that primary data is factual and original whereas secondary data is just the analysis and interpretation of the published or already existing data. Both these sources of data have been used in this research.

The present study used both primary data and secondary data. In view of the mixed approach of the study, while the primary data was collected with the help of both quantitative methods and qualitative methods, on the other hand, the secondary data was collected from various sources such as government policy documents, books, online and published material etc.

3.11. PREPARATION OF THE INTERVIEW SCHEDULE:

After the selection of the area, a comprehensive interview schedule was developed including all the parameters of study into a locality. The framing of questions included the respondents' name and households' characteristics which dealt by social profile of the respondent. A wide range of options should also be provided so that quantitative analysis of the survey can be done. A interview schedule administered to gather data related to the household's socio-demographic characteristics, occupation, educational level, perception on latrine facilities, structured question to latrine owners and non-latrine owners, source of water, presence or absence of latrines, latrine structure, utilization efficiency, where they defecate, and what problems they have faced in case they lacked a latrine, who advised to construct latrine, whether they have a plan to construct a latrine shortly, the number of people using a latrine, the distance of

the latrine, availability of water to clean the latrine and sewerage service to clean the latrine, measure (s) taken when the latrine pit gets filled, source of water, treatment(s) undertaken for drinking, and exposure to waterborne disease, content on hygienic condition and waste management covered in interview schedule. The knowledge and practices were assessed by "Yes or No" questions. "Yes" indicates the presence of knowledge/positive practice. The attitude was assessed by sentences with three responses such as disagree, neutral, and agree. "Agree" indicates positive attitude.

OBSERVATION:

The household survey was supplemented by a spot observation of the household environment and latrines by the researcher. A pre-determined checklist enabled easy and fast collection of data. The purpose of visual inspection was to determine the usage and quality of latrines. The superstructure and slab/platform of the latrines, as well as hand washing facilities, latrine cover, and distance from water source/house were examined. The essential criteria for latrine usage were visible access (a well-worn path to the latrine), and presence of faeces and/or flies in or around pit. Researcher also made substantial effort to visit community toilets/ school toilets/ Anganawadi toilets and interacted with various stakeholders associated with implementation of sanitation schemes in rural area. Most of the schools and Anganawadi rural areas were built the toilets, but they are not properly functioning due to lack of water.

3.12. QUANTITATIVE DATA TABULATION:

After the survey was conducted, acquired data has been tabulated for further statistical and observational analysis.

Tabulation & Statistical Analysis- Tools applied

The data is ready for tabulation after systematic coding the data. The collected data was systematically entered into excel sheet and which was later transformed in SPSS 20. Thereafter, the data is processed for tabulation in order to have the desired results. The classified data are put into the form of tables, graphs and carried into comparative analysis.

The study uses both analytical and statistical methods. The analysis was done by the method of descriptive statistics, case analysis and frequency analysis. The data analysis

work based on the computation of various percentages, correlation & frequencies etc by applying various statistical tools including SPSS software. Collected data were checked for completeness, readability, or error. Descriptive and inferential analyses of quantitative data were performed employing Statistical Package for Social Science (SPSS; version 20) and results were presented in the form of frequency and percentage tables. A Chi-square test was conducted to see the association between various determinant factors and having latrine or tap water at for statistical significance.

3.13. DATA CLEANING:

After systematic enter of the survey data, data validation is done to clean the data by applying logical and other consistency checks so as to ensure that the collected data is consistent. Data cleaning procedure improved the quality of the data for coding. Certain numerical coding patterns have been used to process both qualitative and quantitative information from the survey for data analysis.

3.14. DATA ANALYSIS:

The analysis of data is the main work of any researcher. It included various statistical methods. In this study, data analysis has been done on the basis of percentage of respondents reply and their correlation to the facts prevailing in the locality. Along with quantitative reasoning, qualitative explanations have also been made to understand the ground reality of unequal distribution of services related to urban water supply and sanitation.

Analysis of the data was performed with Statistical Package for Social Sciences (SPSS) software. Keeping in view the objectives, the correlation and Chi -square-test were used to find the significance of the difference between the variables.

Chi-square formula is a statistical formula to compare two or more statistical data sets. It is used for data that consist of variables distributed across various categories and is denoted by $\chi 2$.

The chi-square formula used in the research

$$\chi 2 = \sum (Oi - Ei)2/Ei,$$

Where Oi = observed value (actual value)

and Ei = expected value.

Chi Square test:

The Chi square test rolled on to get the significant correlation or association between two variables. The usual alpha level is 0.05 (5%). The present study was adopted Chi Square test for the statistical analysis of the data.

3.15. LIMITATIONS OF THE STUDY:

- The limited rural areas of Vijayapura District and of those which are awarded under Nirmala Grama Puraskar.
- The total sample size of the respondents limited to 300.
- There was no structured questionnaire or interview schedule to collect responses from Schools/ Anagawadi to assess the functionality status of latrine being constructed; however physical verification by the researcher and interaction with parents, school going children and teachers provided sufficient information.

3.16. ORGANISATION OF THE CHAPTER SCHEMES:

The present report divided into five chapters. A brief outlay of the Chapters is described below.

Chapter One: It is the introductory chapter which summarizes the study in a collective way by understanding the context sanitation framework on National and International prospect. This chapter evidently deals with sanitation programs implemented by Central and State Government and its foot mark in implementing the sanitation programs/ schemes. Very definite information about Total Sanitation Campaign (TSC) is provided and elaborated in this chapter.

Chapter Two: This section of the report is an attempt to identify the gaps through literature review. Literature review enabled to pose the research questions and it has helped to develop the Questionnaires/Interview schedule. The theoretical understanding of sanitation program in India and Karnataka; on perception of various authors by reviewing large quantity of articles, journals, reports, and books reviewed on the context of TSC, NBA and SBM programs.

Chapter Three: This section of the report presents the methodology, database, sampling size, interview schedule development, selection of villages, randomization

method, primary survey, execution of the survey, data collection method, statistical tools, and techniques used for data analysis and limitation of study.

Chapter Four*:* Presents the data analysis, results, and discussions. This section is a presentation of primary data by using the adequate statistical tools and techniques. Graphical and table presentation with description is showed in the section. The variables like demographic profile of respondents, socio-economic aspects, latrine knowledge and perceptions, context of latrine owners/ non-latrine owners, water source, hygiene aspect and waste management is covered in the analysis.

Chapter Five– Summary and Conclusion derives the summary of major findings, conclusion and Recommendations. This section also involves the appendix of references and interview schedule for survey.

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CHAPTER -4

ANALYSES AND INTERPRETATION

4.1. Introduction

4.2. Geographical Background Of The Respondent

4.3. Socio-Economic Aspects

4.4. Latrine Knowledge And Perceptions

4.5. Latrine Owners

4.6. Non-Latrine Owners

4.7. Source Of Water

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4.9. Communication

4.10. Waste Management

4.11. Association Between the Variables

4.1. Introduction:

This section of the research report provides the analysis of the primary data collected. The Impact Study on Total Sanitation Campaign in Vijayapura District" as discussed already in chapter of 3 of report under Methodology section, the primary data was collected from totally 300 respondents living in villages of Vijayapura district. Socio-economic background of the respondents is essential to assess the awareness of rural people on health, hygiene and sanitation. As such, rural people are unaware about the causes of different diseases and even health facilities at rural areas are also poor. Further, the water used for drinking purpose are contaminated and in this regard, the Government of Karnataka taken initiation to supply pure drinking water at villages recently.

In this way, health of the rural people is adversely affected due to unhygienic conditions. Perhaps there are good schemes such as Swachh Bharat Abhiyan (SBA) and earlier known as Nirmal Bharat Abhiyan (NBA), Total Sanitation Campaign (TSC) the awareness level among villagers on benefits of such schemes determines effective utilization and efficiently carried. The researcher witnessed during the visit few of the selected villages in Vijayapura district; it is found that, though the Government of India and Government of Karnataka are financially supporting the eligible household towards construction of new toilets, still they are habituated for open defecation. In this way, due to such habits the diseases are spread among people especially children. Even many of the rural women feel shy or humiliated for open defecation; still they are habituated to the same due to lack of toilets.

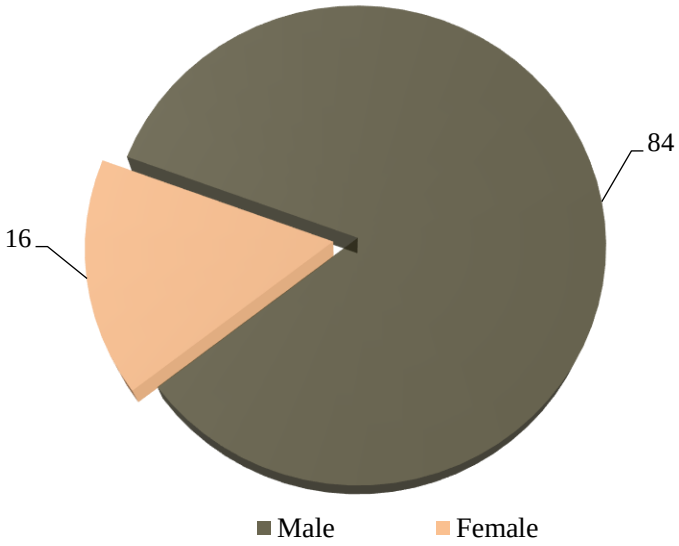
The survey covered total 300 respondents constituting 252 male respondents and 48 female respondents, who have gained benefits from Total Sanitation Campaign (TSC) and Swachh Bharat Abhiyan. To collect the primary data, researcher personally interviewed the respondents at their houses and the collected primary data on socio-economic information of the respondents are being analysed, interpreted and discussed below. Inadequate sanitation is associated with significant morbidity from diarrhoeal disease, soil-transmitted infection, trachoma, and malnutrition. Systematic reviews have found that sanitation interventions could reduce this disease burden, but the studies reviewed were often of poor quality or measured the effect of sanitation in combination with other water and hygiene interventions. In this context researcher undertook study to measure the impact of household latrines.

4.2. GEOGRAPHICAL BACKGROUND OF THE RESPONDENT

Table No. 4.1. Gender prospects of the respondents

Gender	Frequency	Percentage
Male	252	84.0
Female	48	16.0
Total	**300**	**100.0**

Fig 4.1 Gender of the respondents



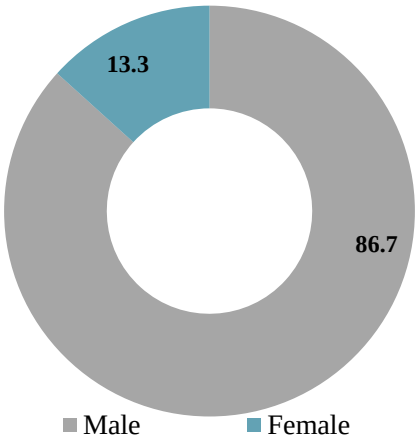
The above table no: 4.1 describes the gender composition is presented. Out of 300 respondents, a majority of 84.0 percent respondents are males and remaining of 16.0 percent are female respondents.

It is clear from the table that majority 84.0 percent of the male respondents are participated in the present study.

Table No. 4.2. Head of the household on gender basis

Gender	Frequency	Percentage
Male	260	86.7
Female	40	13.3
Total	**300**	**100.0**

Fig 4.2 Household headed-by on the count of gender



The table no 4.2 shows that household is headed by whom. Out of 300 respondents, majority 86.7 percent of the respondents said that male family member is headed. A very small 13.3 percent of the respondents mentioned that female family member is headed.

It is clear from the above table that majority 86.7 percent of the respondents said that male family member is headed. It may be true because the prominence of male dominated family and hence the head of the family considered to be the male member in family. While taking interview and visit to villages by the researcher it is observed, on record it is mentioned the head of the family is male but surprisingly in the process of decision making or financial management women too have similar role sometimes more than what male performs hence there is equality and understanding between men and women in the family.

Table No. 4.3. Occupation of the head of the households

Type of Occupation	Frequency	Percentage
Professional/ Technical	20	6.7
Day Labour	54	18.0
Civil Service	12	4.0
Service/Sales/Commercial	4	1.3
Agricultural	206	68.7
Other (specify)	4	1.3
Total	**300**	**100.0**

The table 4.3 explicitly the occupation of the head of the households. Out of 300 respondents, a majority 68.7 percent of the respondents had depended on agriculture. A notable 18.0 percent of the respondents work as daily labours. A small 6.7 percent of the respondents are working is professional/ technical field. 4.3 percent of the respondents are in civil services. A very small 1.3% of the respondents are selected service/sales/commercial as occupation.

It is clear from the above table that majority 68.7 percent of the respondents had depended on agriculture. Occupation of family members and particularly of head of family determines the living standard of the family. In this context researcher paid attention to collect the information on the occupation of the head in the household

Table No. 4.4. Education level of the respondents

Education level	Frequency	Percentage
Illiterate	180	60.0
Pre-School	16	5.3
Some Primary	22	7.3
Finished Primary	18	6.0
Finished Secondary	25	8.3
Higher	39	13.0
Total	**300**	**100.0**

The table 4.4analyze the educational level of the respondent. Out of 300 respondents, a majority 60.0% of the respondents found to be illiterates. Whereas a notable 13.0 percent of the respondents had higher education. A very small respondents had finished secondary (8.3%); Primary (7.3%); Finished primary (6.0%);and pre-schooling (5.3%) respectively.

It is clear from that above table that a majority 60.0 percent of the respondents found to be illiterates. Education of the respondents plays significant role in health consciousness among people. If the education is more, then there will be more health and hygiene consciousness and vice versa. In this respect, the primary data collected on education level of the respondents and presented in the following table.

4.3. SOCIO-ECONOMIC ASPECTS:

Socio-Economic aspect of the respondents plays a vital role in understanding the family background and their perception. It is anticipated that higher level of socio-economic condition among the respondents drives to the more effective inclination to construct, utilize and keep the health of the family intact. Better economic condition always provides an opportunity for head of the family to look after essential and required necessity for house.

In this viewpoint, researcher has tried collect the information and responses from the household respondents to assess the socio-economic condition of the family.

Table No. 4.5. Respondents owning agriculture land

Owning agriculture land	Frequency	Percentage
Yes	186	62.00
No	114	38.00
Total	**300**	**100.0**

The above table no: 4.5 describes that weather the respondents is owned agriculture land. Out of 300 respondents, a majority 62.0 percent of the respondents have own agriculture land. Whereas, remaining 38.0 percent of the respondents do not have agriculture land.

It is clear from the above table that a majority 62.0 percent of the respondents have own agriculture land.

Fig 4.3 Percentage of respondents owning agriculture land

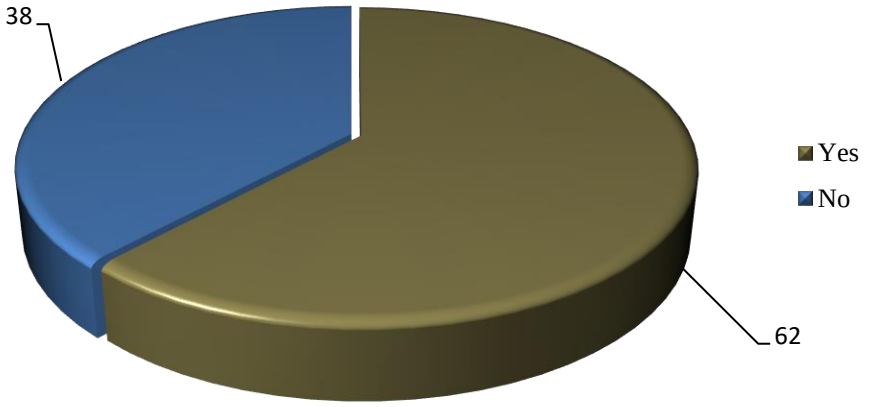


Table No. 4.6. Details about the size of the land owned by the respondents

Size of land	Frequency	Percentage
1 to 2 acres	19	10.3
3 to 4 acres	24	12.9
5 to 6 acres	53	28.4
6 & above acres	90	48.4
Total	**186**	**100.0**

The above table no: 4.6 provides the details about the size of the agriculture land owned by the respondents. It is evident that out of 300 respondents, nearly half 48.4 percent of the respondents have 6 and above acres of agriculture land. Furthermore, a good number 28.4 percent of the respondents have informed that they have 5 to 6 acres of agriculture land. A small 12.9 percent and 10.3 percent of the respondents have 3 to 4 acres and 1 to 2 acres of agriculture land.

It is clear from the above table that nearly half 48.4 percent of the respondents have 6 and above acres of agriculture land which actually depicts the economic well-being of the households.

Table No. 4.7. Kind of Respondents House Wall

Kind of Respondents House Wall	Frequency	Percentage
Concrete/ brick	168	56.0
Fibrous cement	71	23.7
Galvanized steel	4	1.3
Wood	49	16.3
Bamboo/Straw with mud	4	1.3
Stone with mud/cement	4	1.3
Total	**300**	**100.0**

The above table no 4.7 elaborates the derails about shelter walls of the respondents house. Out of 300 respondents, majority 56.0 percent of the respondents shelter walls are constructed with concrete / bricks. A significant 23.7 percent of the respondents house walls are constructed with fibrous cement. A good 16.3 percent of the respondents wall is constructed with wood. A very small 1.3percent of the respondents houses wall is galvanized steel, bamboo with mud and stone with mud/cement respectively.

It is clear from the above table that majority 56.0 percent of the respondents shelter walls are constructed with concrete / bricks.

Table No. 4.8. Type of roof of the respondent house

Type of roof	Frequency	Percentage
Concrete	167	55.7
Fibrous cement	70	23.3
Galvanized steel	5	1.7
Wood	49	16.3
Plastic sheet	5	1.7
Other (Specify)	4	1.3
Total	**300**	**100.0**

The table presented below in 4.8 provides details about the type of roof of the house. Out of 300 respondents, a majority 55.7 percent of the respondents having concrete roof to their house. A good number 23.3 percent of the respondents houses roof constructed fibrous cement. A small 16.3 percent of the respondents house roof is structured with wood. A very small 1.7% of the respondents house roof is structured with galvanized steel and plastic sheet these houses are considered to be low income and BPL families who are not in position to construct well off houses.

It is clear from the above table that a majority 55.7 percent of the respondents having concrete roof to their house.

Table No. 4.9. Type of assets owned by the Respondents

The assets owned by the households are indeed a key element factor to understand the priority of the households. Indeed the assets are signifies the economic well-being of the family. Contextually the households have opined that all the assets owned by them are essential to the nature for the daily life.

Type of Assets	Yes	No	Total
Motorbike	198 (66.0)	102 (34.0)	**300** **(100.0)**
Bicycle	76 (25.3)	224 (74.7)	**300** **(100.0)**
Television	227 (75.7)	73 (24.3)	**300** **(100.0)**
Radio	20 (6.7)	280 (93.3)	**300** **(100.0)**
Mobile Phone	248 (82.7)	52 (17.3)	**300** **(100.0)**
Cow and Buffalo	34 (11.3)	266 (88.7)	**300** **(100.0)**

The above table no 4.9 explicit information about the assets owned by the respondents. Out of 300 respondents, a majority 66.0 percent of the respondents are owned motorbike and 34.0 percent of the respondents don't own. A notable 25.3 percent of the respondents are owned bicycle and 74.7 percent of the respondents don't own. A majority 75.7 percent of the respondents are owned television and 24.3 percent of the respondents don't own. A very small 6.7 percent of the respondents have radio and 93.3 percent of the respondents don't have radio. A majority 82.7 percent of the respondents have mobile phone and 17.3 percent of the respondents don't have mobile. Only 11.3 percent of the respondents have cow and buffalo and 88.7 percent of the respondents don't have cow and buffalo.

It is clear from the above table that a majority 66.0 percent of the respondents are owned motorbike, 25.3 percent of the respondents are owned bicycle, 75.7 percent of the respondents are owned television; small 6.7 percent of the respondents have radio, 82.7 percent of the respondents have mobile phone and a very small 11.3 percent of the respondents have cow and buffalo.

Table No. 4.10. Main source of income in cash income of family members by the respondent's

Source of Income	Frequency	Percentage
Selling crops	115	38.3
Farm labour	98	32.7
Business/trading	40	13.3
Salary	47	15.7
Total	**300**	**100.0**

The above table no: 4.10 explains about the main source of income as informed by the households. Out of 300 respondents, a significant 38.3 percent of the respondents main source of family income is selling crops. Furthermore, 32.7 percent of the respondents main source of family income is farm labour. A small 15.7 percent of the respondents main source of family income is salary and 13.3 percent of the respondents main source of family income is business/trading.

It is clear from the above table that a significant 38.3 percent of the respondents main source of family income is selling crops.

Table No. 4.11. Frequency of the time that households do savings by Respondents

Frequency & timeline	Frequency	Percentage
Each week	207	69.0
Each Months	29	09.7
2-3 times per year	7	02.3
Once in a year	25	08.3
Rarely	5	01.7
Never	27	09.0
Total	**300**	**100.0**

The above table 4.11 describes the frequency of the time that households do savings. Out of 300 respondents, a majority 69.0 percent of the respondents do savings weekly. A small 9.7 percent of the respondents do savings monthly; 9.0 percent of the respondents never do savings and 8.3 percent of the respondents do savings once in a year. A very small 2.3 percent of the respondents do savings 2-3 times per year and 1.7 percent of the respondents save rarely.

It is clear from the table that a majority 69.0 percent of the respondents frequency of savings is weekly. It may be true that families have adopted regular saving on weekly basis. This can be assumed the impact of SHG's concept wherein women take a lead to put their weekly saving to SHG groups and gets their required support during yielding times or in an emergency situation.

Table No.4.12. Availing Micro-finance loan by the respondents

Availing Loan	Frequency	Percentage
Yes	97	32.7
No	207	67.3
Total	**300**	**100.0**

Table 4.12 depicts that does respondents availed micro-finance loan. Out of 300 respondents, a majority 67.3 percent of the respondents did not took loan from micro-finance. A notable 32.7 percent of the respondents have availed micro finance.

It is clear from the above table that a notable 32.7 percent of the respondents have availed micro finance.

Table No. 4.13. Reasons for Availing Loan by Respondents

Purpose	Frequency	Percentage
Family purpose	1	1.5
Business	24	24.7
Purchasing seeds/fertilizer	64	65.4
Education of Children	4	4.2
Self-Employment	4	4.2
Total	**97**	**100.0**

The above table 4.13 reveals the reasons for availing for loan received from micro-finance. Out of 97 respondents, majority 65.4 percent of the respondents have taken loan for purchasing seeds/fertilizer. A notable 24.7 percent of the respondents have taken loan for doing business. A very small 4.2 percent of the respondents have taken loan education of children and self-employment respectively. Only 1.5 percent of the respondents have taken loan for family purpose.

It is clear from that above table that a majority 65.4 percent of the respondents have taken loan for purchasing seeds/fertilizer.

4.4. LATRINE KNOWLEDGE AND PERCEPTIONS:

The adverse health effects of open defecation are well known to stunting and malnutrition, diarrhoea and other communicable diseases. Reducing open defecation requires access to improved sanitation facilities. Recent years have witnessed an increase in latrine construction and access among rural Indian households. However, the transition from defecating in the open to using latrines appears to have been slower. Among other factors, behaviour change in the north Northern Karnataka may be influenced by social norms and cultural beliefs, especially those related to ritual purity and impurity. These include the belief that open defecation is acceptable and harmless or that pits may require more frequent cleaning if all household members use the latrine, the cultural anxiety that building a latrine close to the house can make it "impure", the social norm that pit cleaning is not only an unpleasant but also a demeaning (especially for higher caste members) and socially threatening job or that open defecation is a "mannish" activity.

While interacting with it is found that why they defecated in the open, a majority of them indicated that they were simply used to it, and few of them opined that it has been practiced for generations, and lesser percentage of families were opined that had simply never thought of defecating in latrines. This suggests that behaviour change in this context may also require changing people's mind-set about how they think about defecation practices. Latrine access requires supplementation with behaviour change communication. Ending open defecation likely requires addressing the social, cultural, and normative barriers that may get in the way of improved sanitation practices in relation to open defecation.

Findings from the field survey confirmed the study hypothesis that social normative and empirical expectations were in fact associated with individual behaviour and influential element of behaviour change. People's especially men's normative belief were closely linked to what they expected others in their reference group to believe, even though they slightly underestimated the extent of pro-latrine norms (beliefs) among others.

Factor associated with latrine ownership include ; sanitation with the current place of open defecation, perception of adequacy of water and the land of latrine ownership, social norms, sanctions, and enforcement, and perceived latrine

affordability. Emotional, physical and social drivers also showed a significant positive adjusted association with latrine ownership. Apart from one exception, there was no interaction between the behavioural determinants and wealth on latrine ownership. It concludes that understanding the factors which prevent or facilitate the widespread construction of latrines will inform interventions aimed at changing collective behaviour and creating demand for improved sanitation.

Toilet ownership in Karnataka especially in Vijayapura district has grown in recent years, but open defecation can persist even when rural households own latrines. There are at least two pathways through which social norms inhibit the use of toilets in rural areas (i) beliefs/expectations that others do not use toilets or latrines or find open defecation unacceptable; and (ii) beliefs about ritual notions of purity that dissociate latrines from cleanliness. Many surveys in Karnataka find a positive correlation between latrine use and social norms at baseline. This suggests that low-cost information campaigns can effectively improve pro-latrine beliefs and practices, as well as shift perceptions of why many people still find open defecation acceptable. Measuring social norms as described can help diagnose barriers to reducing open defecation, contribute to the quality of large-scale surveys, and make development interventions more sustainable

Giving the above perception into the context, it is appeared to be more evident to understand the mind-set and prospective of the respondents who covered in the survey. The result and finding responses from the survey is presented in below.

Table No. 4.14. Place where adult usually go for defecation

Option for defecation	Frequency	Percentage
Household latrine	155	51.70
Public Toilets	4	1.30
Open Defecation- near house	122	40.70
Open defecation-field/forest	19	6.30
Total	**300**	**100.0**

The above table no 4.14 explains about the place where adults usually go for defecation. Out of 300 respondents, more than half 51.7 percent of the respondents usually use household latrine for defecation. A significant number 40.7 percent of the respondents usually go for open place for defecation which is near to house. A small 6.3 percent of the respondents go for open field or forest for defecation. A very small 1.3 percent of the respondents use public toilets.

It is clear from the above table a majority more than half 51.7 percent of the respondents usually use household latrine for defecation. It may true that government schemes and programs have good impact on the rural people.

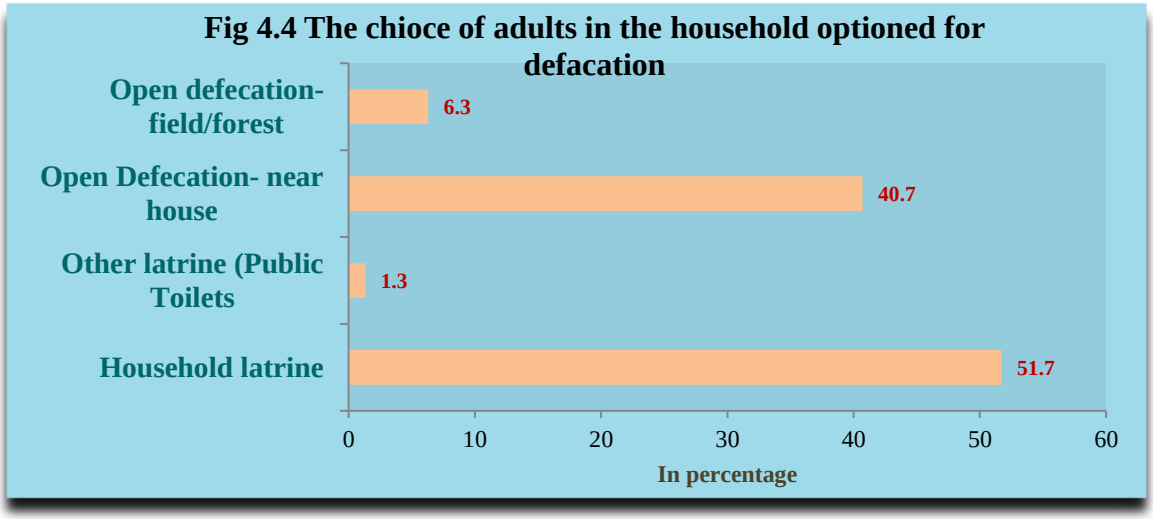


Table No. 4.15. Distance between defecate place and house in meters by Respondents

Distance in Meters	Frequency	Percentage
10Mtr	123	41.00
20Mtr	29	9.70
100Mtr	53	17.70
200Mtr	91	30.30
300Mtr	4	1.30
Total	**300**	**100.0**

The above table no 4.15 describes the distance between defecation place and house in meters by the respondents. Out of 300 respondents, a significant 41.0 percent of the respondents have 10 meters of distance between defecation place and house. A very good 30.3 percent of the respondents have 200 meters of distance between defecation place and house. A notable 17.7 percent of the respondents have 100 meters of distance. A very small 9.7 percent of the respondents have 20 meters and 1.3 percent of the respondents have 300 meters of the distance between defecation place and house.

It is clear from the above table that a significant 41.0 percent of the respondents have 10 meters of distance between defecation place and house.

Table No: 4.16. The level of satisfaction on defecate place by Respondents

Level of satisfaction on current defecation place	Frequency	Percentage
Very satisfied	89	29.7
Satisfied	66	22.0
Unsatisfied	143	47.7
Very unsatisfied	2	0.7
Total	**300**	**100.0**

The above table no 4.16 explains about the level of satisfaction on current defecation place. Out of 300 respondents, nearly half 47.7 percent of the respondents are not satisfied with their current defecation place. A significant 29.7 percent of the respondents are very satisfied on current defecation place. Furthermore, a good number 22.0 percent of the respondents are satisfied with their current defecation place. A very small 0.7 percent of the respondents are very dissatisfied with the current defecation place.

It is clear from the above table that nearly half 47.7 percent of the respondents are not satisfied with their current defecation place.

Table No. 4.17. Place used for children defecate in household by Respondents

Option for defecate	Frequency	Percentage
Household Latrine	136	45.3
Open defecation- near house	124	41.3
Open defecation-field/forest	19	6.3
No children	21	7.1
Total	**300**	**100.0**

The above table no 4.17 explains about the place used for children defecate in household. Out of 300 respondents, a significant 45.3 percent of the respondents children place of defecate is household latrine. Furthermore, 41.3 percent of the respondents children place of defecate is open place which is near to home. A very small 6.3 percent of the respondents children defecation place is open field / forest. Rest 7.1 percent of the respondents don't have children.

It is clear from the above table that a significant 45.3 percent of the respondents children place of defecate is household latrine.

Table No: 4.18. The disposal place of baby's faeces by Respondents

Place of baby's faeces dispose	Frequency	Percentage
Put into latrine	68	22.7
Put into drain/ditch	26	8.7
Thrown in garbage	14	4.7
Left in open	65	21.7
Having no baby	127	42.2
Total	**300**	**100.0**

The above table no 4.18 depicts about the disposal place of baby's faeces. Out of 300 respondents, a good number 22.7 percent of the respondents said that they put baby's faeces into latrine. Furthermore, 21.7 percent of the respondents have said that they put baby's faeces in open places. A very small 8.7 percent of the respondents put baby's faeces in drain/ditch and 4.7 percent of the respondents throw baby's faeces in garbage. Rest 42.2 percent of the respondents said that they don't have babies.

It is clear from the above table that a good number 22.7 percent of the respondents said that they put baby's faeces into latrine.

Table No. 4.19. Type of latrine known by the Respondents

Type of latrine	Frequency	Percentage
Flush-pour-flush	28	9.3
Ventilated improved pit (VIP) latrine	66	22.0
Pit latrine with slab	198	66.0
None	8	2.7
Total	**300**	**100.0**

The above table no 4.19 explains about type of latrine known by the respondents. Out of 300 respondents, a majority 66.0 percent of the respondents known about pit latrine with slab. A very good number 22.0 percent of the respondents known about ventilated improved pit latrine. A small 9.3 percent of the respondents known about flush pour flush. A very small 2.7 percent of the respondents don't know about type of latrine.

It is clear from the above table that a majority 66.0 percent of the respondents known about pit latrine with slab.

Table No. 4.20. Means and mode through which households have learnt about latrines

Means and mode	Responses	Frequency	Percentage
Community Meeting	Yes	229	76.3
	No	71	23.7
	Total	**300**	**100.0**
Village Chief	Yes	217	72.3
	No	83	27.7
	Total	**300**	**100.0**
Neighbours	Yes	56	18.7
	No	244	81.3
	Total	**300**	**100.0**
Relative	Yes	56	18.7
	No	244	81.3
	Total	**300**	**100.0**
Mason	Yes	8	2.7
	No	292	97.3
	Total	**300**	**100.0**
Radio	Yes	7	2.3
	No	293	97.7
	Total	**300**	**100.0**
Poster	Yes	20	6.7
	No	280	93.3
	Total	**300**	**100.0**
Bill Board advertisement	Yes	35	11.7
	No	265	88.3
	Total	**300**	**100.0**
Television advertisement	Yes	198	66.0
	No	102	34.0
	Total	**300**	**100.0**
NGO/Agency Worker	Yes	61	20.3
	No	239	79.7
	Total	**300**	**100.0**
Government Representative	Yes	84	28.0
	No	216	72.0
	Total	**300**	**100.0**

The above table no 4.20 explains Means and mode through which households have learnt about latrines. Out of 300 respondents, a majority 76.3 percent of the respondents said that a community meeting was the main channel learnt about the latrines. Rest 23.7 percent of the respondents marked as no.

Out of 300 respondents, a majority 72.3 percent of the respondents learnt about latrines from village chief. Rest 27.7 percent of the respondents said that they never come across about latrines from village chief.

Out of 300 respondents, a good 18.7 percent of the respondents have mentioned that they had learnt from neighbours and 81.3 percent of the respondents said they never learnt about latrine from neighbours.

Out of 300 respondents, a good 18.7 percent of the respondents have mentioned that they had learnt about latrine from relative and 81.3 percent of the respondents said they never learnt about latrine from relative.

Out of 300 respondents, a very small 2.7 percent of the respondents have learnt about latrine from mason and 97.3 percent of the respondents never learnt about latrine from mason.

Out of 300 respondents, a very small 2.3 percent of the respondents have learnt about latrine from radio and 97.7% of the respondents never learnt about latrine from radio.

Out of 300 respondents, a very small 6.7 percent of the respondents have learnt about latrine from poster and 93.3 percent of the respondents have never learnt about latrine from poster.

Out of 300 respondents, a small 11.7 percent of the respondents have learnt about latrine from bill board advertisement and 88.3 percent of the respondents have not learnt from bill board advertisement.

Out of 300 respondents, a majority 66.0 percent of the respondents have learnt about latrine from television advertisement and rest 34.0 percent of the respondents didn’t learnt from television advertisement.

Out of 300 respondents, a good number 20.3 percent of the respondents have learnt about latrine from NGO/ Agency Worker and 79.7 percent of the respondents said that they have not learnt from NGO/Agency Worker.

Out of 300 respondents, a good 28.0 percent of the respondents have learnt about latrine from government representatives and 78.0 percent of the respondents have not learnt about latrine from government representatives.

It is clear from the above table that a majority 76.3 percent of the respondents said that community meetings was the main channel learnt about the latrines; a majority 72.3 percent of the respondents learn about latrines from village chief; a good 18.7 percent of the respondents have mentioned that they had learn from neighbours; a good

18.7 percent of the respondents have mentioned that they had learn about latrine from relative; a very small 2.7 percent of the respondents have learnt about latrine from mason; a very small 2.3 percent of the respondents have learnt about latrine from radio; a very small 6.7 percent of the respondents have learnt about latrine from poster; a small 11.7 percent of the respondents have learnt about latrine from bill board advertisement; a majority 66.0 percent of the respondents have learnt about latrine from television advertisement; a good number 20.3 percent of the respondents have learnt about latrine from NGO/ Agency Worker; and a good 28.0 percent of the respondents have learnt about latrine from government representatives. Communication channel nowadays is derived in many ways and information is shared in a minutes at the figure tip of the people. There are numerous ways and means to getting the information and passing knowing information to others. Print and electronic media deliberately and instantly provide information not only of the current affairs but also about various government programs and schemes.

Table No. 4.21. The kind of latrine households like to the most

Preference	Frequency	Percentage
Flush/pour flush	292	97.3
Dry pit latrine	8	2.7
Total	**300**	**100.0**

The above table no 4.20 specifies that the kind of latrine respondents like most. Out of 300 respondents, it is found that a majority 97.3 percent of the respondents like flush/pour flush most. A very small 2.7 percent of the respondents preferred dry pit latrine.

It is clear from the above table that a majority 97.3 percent respondents like flush/pour flush most.

Table No. 4.22. Know anyone who can build a latrine by Respondents

Response	Frequency	Percentage
Yes	263	87.7
No	37	12.3
Total	**300**	**100.0**

The above table no 4.22 explores weather respondents know anyone who build a latrine. Out of 300 respondents, a vast majority 87.7 percent of the respondents know someone who can build a latrine. A small 12.3 percent of the respondents said that they don't know anyone who can build latrine.

It is clear from the above table that a vast majority 87.7 percent of the respondents know someone who can build a latrine.

Table No: 4.23. The Disadvantages of owning a latrine by the Respondents

Type of Disadvantages	Frequency	Percentage
Bad smell	13	4.3
Cost of maintenance	151	50.3
Effects on ground water	23	7.7
Overflows	113	37.7
Total	**300**	**100.0**

The above table no 4.23 explains about the disadvantages of owning a latrine by the respondents. Out of 300 respondents, a majority 50.3 percent of the respondents feel disadvantage that owning a latrine is cost of maintenance. A significant 37.7 percent of the respondents feel disadvantage that owning a latrine is overflows. A very small 7.7 percent of the respondents feel disadvantage that owning a latrine effects on ground water and 4.3 percent of the respondents feel disadvantage that owning a latrine smells bad.

It is clear from the above table that a 50.3 percent of the respondents feel disadvantage that owning a latrine is cost of maintenance.

Table No. 4.24. The advantages of owning latrine by the Respondents

Advantages	Frequency	Percentage
Improved hygiene/health/cleanliness	104	34.7
More Privacy	24	8.0
More comfortable	95	31.7
Convenience/save time	34	11.3
Improved safety	31	10.3
Improved status/prestige	12	4.0
Total	**300**	**100.0**

The above table no 4.24 explains the advantage of owning latrine. Out of 300 respondents, a significant number 34.7 percent of the respondents said owning latrine helps to improves hygiene/health/cleanliness. Furthermore, 31.7 percent of the respondents feel advantage because they feel more comfortable having own latrine. A good number 11.3 percent of the respondents feel advantage because they feel owning latrine is convenience and it save time and 10.3 percent of the respondents feel advantage because owning latrine improves safety. A very small 8.0 percent of the respondents feel advantage because having own latrine increases more privacy. Only 4.0 percent of the respondents feel advantage because owning latrine improves status/prestige.

It is clear from the above table that a significant number 34.7 percent of the respondents said owning latrine is advantage because it helps to improves hygiene/health/cleanliness.

Table No. 4.25. The amount required to construct latrine as opined by the HH

In rupees	Frequency	Percentage
15000.00	152	50.7
20000.00	107	35.7
50000.00	25	8.3
60000.00	4	1.3
No response	12	4.0
Total	**300**	**100.0**

The above table no 4.25 describes the amount required to construct latrine as opined by the respondents. Out of 300 respondents, a majority 50.7 percent of the respondents said that to build a latrine is Rs. 15000.00 required. A significant 35.7 percent of the respondents feel that they require Rs. 20000.00 to construct their own latrine. A small 8.0 percent of respondents have said that Rs. 50000.00 is required to construct latrine. A very small 1.3 percent of respondents said that they require Rs.60000.00 to construct latrine. Rest 4.0 percent of the respondents had not given response to this.

It is clear from that above table that a majority 50.7 percent of the respondents said that to build a latrine is Rs. 15000.00 required.

Table No. 4.26. Importance of spending money for owning Latrine by Respondents

Importance	Frequency	Percentage
Very important	297	99.0
Quite important	3	1.0
Total	**300**	**100.0**

The table 4.26 explains how importance of spending money for owning latrine in respondents view. Out of 300 respondents, a vast majority 99.0 percent of respondents feels that spending money to have good latrine is very important. A very small 1.0 percent of the respondents mentioned that spending money to have good latrine is quite importance.

It is clear from the above table that a vast majority 99.0 percent of respondents feels that spending money to have good latrine is very important. It may be true because to keep up the health condition of the family safe and secured.

4.5. LATRINE OWNERS:

This section of the report implies about the owners of the latrines and their perception about the usage of latrines, and perception on the latrine usage in their own house and overreaching about not having latrines. Contextually, it is observed that open defecation is still practiced by about a billion people worldwide, is one of the most compelling examples of how place influences health in developing Countries. There have been numerous programs, schemes and plan of action undertaken and carried out by Central and State governments and development organizations to address the rural area remaining open defecation would be greatly supported by a better understanding of why some people adopt latrines and others do not. It is evident that between 2005 and 2012 rounds of the India Human Development Survey (IHDS), a nationally representative panel of households in India, the Country which is home to 60% of the people worldwide who defecate in the open. Among rural households that defecated in the open in 2005, we investigate what baseline properties and what changes over time are associated with switching to latrine use between 2005 and 2012. It is noticed that from the survey that households that are richer or better educated, that have certain demographic properties or that improved their homes over this period were more likely to switch to using a latrine or toilet. However, each of these effect sizes is small; overall switching to latrine use from open defecation is low; and no ready household-level mechanisms are available for sanitation programs to widely influence these factors. Thus this section of the report adds to a growing consensus in the literature that the social context should not be overlooked when trying to understand and bring about change in sanitation behaviour.

Table No. 4.27. Details about owning of latrines by the respondent

Own latrine	Frequency	Percentage
Yes	188	62.7
No	112	37.3
Total	**300**	**100.0**

The above table 4.27 explains about details about owning the latrine by the respondents. Out of 300 respondents, a majority 62.7 percent of the respondents have own latrine. Rest a significant 37.3 percent of the respondents don't have own latrine.

It is clear from the above table that a majority 62.7 percent of the respondents have own latrine.

Table No. 4.28. Functioning of the latrine

Functioning of latrine	Frequency	Percentage
Yes	143	76.06
No	45	23.93
Total	**188**	**100.0**

The above table no 4.28 provides an explanatory response on the functionality of the latrine being owned or constructed by the household. Out of 188 respondents, a majority 76.6 percent of the respondents' latrines are found functional. Remaining 23.4 percent of the respondents' latrines are not functioning.

It is clear from the above table that a majority 76.6 percent of the respondents' latrines are found functional. Hence, it summarizes that people are utilizing it properly.

Table No. 4.29. Reasons for not using latrine by the Respondent

Reasons for not using latrine	Frequency	Percentage
Dirty	1	2.2
No water to flush	25	55.6
Not finished full construction	6	13.3
Used as storage	13	28.9
Total	**45**	**100.0**

The above table no 4.29 highlighted about the reason for not using latrine even after latrine being constructed/ owned by the respondents. Out of 45 respondents, majority 55.5 percent of the respondents mentioned that the insufficient of what for flush was the main reason for not using the latrine. A significant 28.8 percent of the respondents are using latrine as storage so that they are unable to use latrine. A good 13.3 percent of the respondents said that the construction of latrine is not fully completed. A very small 2.2 percent of the respondents feel because of dirty they are unable to use latrine.

It is clear from the above table that majority 55.5 percent of the respondents mentioned that the insufficient of what for flush was the main reason for not using the latrine. All this reasons substantially proves the non-interest of the household to use latrine for defecate hence they are so convenient with open defecation. Surprisingly the head of the family did not even consider the safety and modesty of the female since they too were forced for open defecation.

Table No. 4.30. Reasons for constructing latrine in the first place by respondents

Reasons / opinion	Frequency	Percentage
Programme was offering subsidy	147	78.4
Someone told me I had to	19	10.1
Had enough money to buy	10	05.3
Sick/Old relative	6	03.7
Construction of new house	5	02.5
Total	**187**	**100.0**

The above table no 4.30 highlighted about the Reasons for constructing latrine in the first place by respondents. Out of 187 respondents, a majority 78.4 percent of the respondents informed that programme was offering subsidy. A good number 10.1 percent of the respondents stated that they have constructed latrine because someone asked them to do it. A very small 5.3 percent 3.7 percent and 2.5 percent of the respondents have built latrine because they had enough money to buy, sick/ old relative and construction of new house.

It is clear from the above table that a majority 78.4 percent of the respondents informed that programme was offering subsidy.

Table No. 4.31.Comparison with dry and rainy season among adults who use latrine for defecation

Response	Dry season		Rainy season	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Always	84	44.6	152	80.8
Sometime	48	25.9	18	9.6
Never	56	29.5	18	9.6
Total	**188**	**100.0**	**188**	**100.0**

The above table 4.31 is comparison of use of latrine among adults in dry and rainy season. Out of 188 respondents, nearly half 44.6 percent of the adult respondents use latrine always in dry season when it is compared to rainy season majority 80.8 percent of the respondents use latrine always in rainy season. A good number 29.5 percent of the respondents never use latrine in dry season comparatively it is decreased in rainy season up to 9.6 percent 25.9 percent of the respondents use latrine in dry season when it is compared to rainy season it is decreased to 9.6 percent.

It is clear from the above table that nearly half 44.6% of the adult respondents use latrine always in dry season when it is compared to rainy season majority 80.8% of the respondents use latrine always in rainy season.

Table No. 4.32. The response of households about the usage of latrine among children for defecation during dry/summer and rainy season

Opinion/ response	Dry season		Rainy season	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Always	53	28.1	65	34.5
Sometime	48	25.5	57	30.3
Never	87	46.4	66	35.2
Total	**188**	**100.0**	**188**	**100.0**

The usage of the latrine for defecates during dry and wet season as opined by the respondent is presented in below table 4.32 explains the attention how regularly children were directed to use latrines. Out of 188 respondents, nearly half 46.4 percent of the respondents said that children never use latrine in dry season when it is compared to rainy season it is decreased to 35.2 percent. A good number 28.1 percent of the respondent's children always use the latrine in dry season when it is compared to rainy season it is increased up to 30.3. Furthermore, 25.5 percent of the respondent's children use latrine sometime in dry season this has increased 30.3 percent in rainy season. This is clearly shows that use of latrine among children is high when compared to rainy season.

It is clear from the above table that nearly half 46.4 percent of the respondents said that children never use latrine in dry season when it is compared to rainy season it is decreased to 35.2 percent.

Table No. 4.33. Type of latrine owned by the respondents

Type latrine	Frequency	Percentage
Piped sewer system	6	03.7
Septic tanks	14	07.1
Pit latrine	59	31.3
Ventilated improved pit latrine	5	02.6
Pit latrine with slab	104	55.3
Total	**188**	**100.0**

The above presented in table 4.33 explains about the types of latrine owned by the respondents. Out of 188 respondents, a majority 55.3 percent of the households' latrines is built with pit latrine with slab. A very good number 31.3 percent of the respondents latrines are Pit latrine. A very small 7.1 percent of the respondents-built latrine with septic tank; 3.7 percent of the respondents build latrine with piped sewer system; and 2.6 percent of the respondents constructed latrine ventilated improved pit latrine.

It is clear from the above table that a majority 55.3 percent of the households' latrines is built with pit latrine with slab.

Table No. 4.34. The ground structure of latrine constructed by the households

Ground structure	Frequency	Percentage
Unlined pit	20	10.6
Lined pit beneath latrine	4	2.1
Lined pit offset	156	82.9
Pipe sewerage	8	4.4
Total	**188**	**100.0**

The above table 4.34 explains the ground structures of latrine of respondents. Out of 188 respondents, majority 82.9 percent of the respondents latrine ground structure is lined pit offset. A notable 10.6 percent of the respondents latrine ground structure is unlined pit. A very small 4.4 percent and 2.1 percent of the respondents latrine ground structure is constructed with pipe sewerage and lined pit beneath latrine respectively.

It is clear from that above table that majority 82.9 percent of the respondents latrine ground structure is lined pit offset.

Table No. 4.35. The slab of the latrine owned/ constructed by the respondents

Slab	Frequency	Percentage
Wooden slab	28	14.7
Concrete slab	160	85.3
Total	**188**	**100.0**

The above table 4.35 describes the type of slab of the latrine owned by the respondents. Out of 188 respondents, a majority 85.3 percent of the respondents slab of the latrine is constructed with concrete slab. A small 14.7 percent of the respondents slab of the latrine is constructed with wooden slab.

It is clear from the above table that a majority 85.3 percent of the respondents slab of the latrine is constructed with concrete slab.

Table No. 4.36. Type of shelter walls of the latrines owned by the respondents.

Type of Shelter wall	Frequency	Percentage
Concrete/Brick	153	81.3
Fibrous cement	15	7.9
Wood	12	6.3
Plastic sheet	8	4.5
Total	**188**	**100.0**

The above table 4.36 provides details about the shelter walls of the latrines owned by the respondents. Out of 188 respondent, majority 81.3 percent of the respondents have said that latrine wall is constructed concrete/brick. Whereas a small 7.9 percent of respondents walls been constructed using fibrous cement and 6.3 percent of the respondents latrine walls is constructed with wood. A very small 4.5 percent of the respondents latrine wall is constructed with plastic sheet.

It is clear from the above table that majority 81.3 percent of the respondents have said that latrine wall is constructed concrete/brick.

Table No: 4.37 Type/ kind of shelter roof owned and constructed by the respondents

Type of Shelter roof	Frequency	Percentage
Concrete	148	78.7
Fibrous cement	32	17.0
Galvanized steel	2	1.0
Plastic sheet	6	3.3
Total	**188**	**100.0**

The significant use of cement concrete is evidently found in table 4.37. Out of 188 respondents, majority 78.3 percent of the respondent roof of the latrine constructed with concrete. A considerable 17.0 percent of the respondents roof of the latrine constructed with fibrous cement. A very small 3.3 percent of the respondents roof is constructed with plastic sheet and 1.0 percent of the respondents roof is constructed galvanized steel.

It is clear from the above table that majority 78.3 percent of the respondent roof of the latrine constructed with concrete.

Table No. 4.38. Latrine with attached bathing facility by Respondents

Response	Frequency	Percentage
Yes	24	12.4
No	164	87.6
Total	**188**	**100.0**

The above table no 4.38 indicates weather latrine is constructed with attached bathing facility. Out of 188 respondents, majority 87.6 percent of the respondents didn't construct with attached bathing facility. A small 12.4 percent of the respondents have construed latrine with bathing facility.

It is clear from the above table that a majority 87.6 percent of the respondents didn't construct with attached bathing facility. The household latrines built in rural areas normally do not consist of bathing facilities. The religious & cultural factors and the mixture of impurity is practiced and followed while using latrines. Latrines and bathing are kept separately, farthest distance to avoid any sort of impurity. However, there are well built modern styled houses have facility of latrine and bathing combined in one room is called attached bathroom is rural areas.

Table No. 4.39Whether water is used to flush latrine after defecation by respondents

Response	Frequency	Percentage
Yes	149	79.1
No	39	20.9
Total	**188**	**100.0**

The above table no 4.39 is explicit whether waste is used to flush after defecation. Out of 188 respondents, majority 79.1 percent of the respondents used to flush latrine after defecation. A small 20.9 percent of the respondents don't use flush after defecation.

It is clear from above table that a majority 79.1 percent of the respondents used to flush latrine after defecation. Several study suggests that After defecation, 1.5–2 litres of water is poured (using a small container) into the toilet pan to move the wastes along. This system is popular where people traditionally use water for anal cleansing, and where water is readily available. Water supply and sanitation are often more challenging in rural areas; due to their environmental fragility and relatively poor economic conditions. Rural areas are home to most of those who lack access to unimproved sources of drinking water and safe sanitation. In rural areas, public water provision and sanitation services, as well as water infrastructures such as water collection points, pit latrines and septic tanks, are often inadequately maintained and in poor shape.

Table No. 4.40. Water needed per day to flush the latrine as opined by the respondents

Water needed (In litres)	Frequency	Percentage
Less than 5 litres	13	06.2
6-15 litres	31	16.6
19 to 25 litres	21	11.8
More than 26 litres	123	65.4
Total	**188**	**100.0**

The above table no 4.40 explains about wat3er needed per day to flush the latrine. Out of 188 respondents, a majority 65.4 percent of the respondents said that more than 25 litres water is needed per day. A considerable 16.6 percent of the respondents needed 6 to 15 litres of water per day to flush the latrine. A small 11.8 percent of the respondents mentioned that 19 to 25 litres of water per day to flush the latrine. A very small 6.2 percent of the respondents said that less than 5 litres of water is needed for them.

It is clear from the above table that a majority 65.4 percent of the respondents said that more than 25 litres water is needed per day.

Table No. 4.41. Availability of sufficient water to flush the latrine in dry season

Response	Frequency	Percentage
Yes	155	82.5
No	33	17.5
Total	**188**	**100.0**

The above table no 4.41 explains the availability of sufficient water to flush the latrine in try season. Out of 188 respondents, a majority 82.5 percent of the respondents said they have sufficient water to flush the latrine in dry season and 17.5 percent of the respondents don’t have sufficient water to flush.

It is clear from the above table that a majority 82.5 percent of the respondents said they have sufficient water to flush the latrine in dry season.

Table No. 4.42. The way that current latrine different from your old latrine

Differences	Frequency	Percentage
Pit is now lined	39	20.7
Walls are improved	33	17.5
Roof is improved	52	27.6
Slab is improved	23	12.2
Door has improved	17	9.2
Developed ventilation area	24	12.8
Total	**188**	**100.0**

The table presented below in 4.42 provides differences with present to old latrine. Out of 188 respondents, a very good number 27.6 percent of the respondents have improved roof. Furthermore, 20.7 percent of the respondents improved their latrine with pit is lined. A good number 17.5 percent of the respondents improved their latrines with walls. A small 12.8 percent of the respondents developed their latrine with ventilation. 12.2 percent of the respondents improved their latrine with slab. A very small 9.2 percent of the respondents improved door of the latrine.

It is clear from the above table that a very good number 27.6 percent of the respondents have improved roof.

Table No. 4.43. Year in which the first latrine is been built by Respondents

Year in which the first latrine is built	Frequency	Percentage
2011	2	1.2
2013	6	3.7
2014	12	6.4
2015	95	50.6
2016	18	9.5
2017	8	4.2
2018	4	2.1
2019	29	15.4
2020	13	6.9
Total	**188**	**100.0**

More evidently the table 4.43exponentially displays the year in which respondents have constructed latrine. Out of 188 respondents, half 50.6 percent of the respondents constructed their latrine in the year 2015. A notable 15.4 percent of the respondents constructed latrine in 2019. A small 6.5 percent of the respondents constructed latrine in 2016. A very small 6.9 percent of the respondents constructed in 2019; 6.4% constructed in 2014; 4.2% constructed in 2017; 3.7 percent constructed in 2013; 2.1 percent constructed in 2018 and 1.2 percent constructed in 2011.

It is clear from the above table that half 50.6 percent of the respondents constructed their latrine in the year 2015.

Table No. 4.44. The person who made final decision to build your first latrine

The family member who decided to build first latrine	Frequency	Percentage
Head of the household	152	80.8
Head of household & Spouse jointly	23	12.3
Facility together	13	6.9
Total	**188**	**100.0**

The above table no 4.44 is explained about decision taken to build first latrine in house. Out of 188 respondents, majority 80.8 percent of the respondents said that head of the family is the person who had taken final decision in built first latrine. A notable 12.3 percent of the respondents mentioned that head of the family and spouse jointly took decision. A very small 6.9 percent of the respondents stated that family together has taken the decision of construction of latrine.

It is clear from the above table that a majority 80.8 percent of the respondents said that head of the family is the person who had taken final decision in built first latrine.

Table No. 4.45. The deciding factor to build first latrine by the respondents

Factors influencing	Frequency	Percentage
Programme was offering subsidy	147	78.7
Someone told me I had to	19	10.7
Had enough money to buy	10	5.2
Sick/Old relative	7	3.3
Construction of new house	5	2.1
Total	**188**	**100.0**

The above table no 4.45 narrates the various factors which presumably influenced HH to construct latrine in the first attempt. Out of 188 respondents, majority 78.7 percent of the respondents constructed latrine because programme offering subsidy. A notable 10.7 percent of the respondents mentioned that they get motivated because someone from knowing circle person suggested to construct latrine. A very small about 5.2 percent of respondents said that they were better off with money to construct latrine. There are about 3.3 percent of respondents who informed that family had sick/elderly person who needed latrine hence they have constructed it. 2.1 percent of the respondents have constructed because they were constructing new house.

It is clear from the above table that majority 78.7 percent of the respondents constructed latrine because programme offering subsidy.

Table No. 4.46. Whether Assistance received from any organization to build your latrine For example: (free/subsidized materials or labour, technical advice, loan etc.)

Response	Frequency	Percentage
Yes	156	82.3
No	32	17.7
Total	**300**	**100.0**

While collecting the response about assistance received from any organization to build the latrine by HH is indicated in table 4.46. Out of 188 respondents, majority 82.3 percent of the respondents have confirmed that they have received assistance as subsidy, materials, labour and technical advice. Only about 17.7 percent to respondents have informed that they have not received any sort of assistance either.

It is clear from the above table that majority 82.3 percent of the respondents have confirmed that they have received assistance as subsidy, materials, labour and technical advice.

Table No. 4.47. Type of assistance received from the organization

Assistance	Frequency	Percentage
Free/subsidized material	18	9.4
Subsidized assistance	146	77.6
Encouragement	5	2.6
Technical Advice	2	1.2
Haven't received any assistance	17	9.5
Total	**188**	**100.0**

The kind of assistance received from the organization has been explicitly presented in table 4.47. Out of 188 respondents, majority 77.6 percent of the respondents subsidized assistance received from the organization. A small 9.4 percent and 9.5 percent of the respondents received free subsidized material from the organization. A very small 2.6 percent of the respondents received encouragement and 1.2 percent of the respondents received technical advice.

It is clear from the above table that majority 77.6 percent of the respondents subsidized assistance received from the organization. It may be true because government is providing support to build latrine under Swachh Bharat mission programme.

Table No. 4.48. Stages of constructing latrine by the respondents

Stages	Frequency	Percentage
All at one time	181	96.7
In stages	7	3.3
Total	**188**	**100.0**

As indicated in table 4.48 explains about stages of constructing latrine by the respondents. Out of 188 respondents, a majority of 96.7 percent of the respondents constructed latrine at one time. A very small 3.3 percent of the respondents constructed in stages.

It is clear from the above table that a majority of 96.7 percent of the respondents constructed latrine at one time. Since the construction is simple structure and continues follow-up from the Panchayat members/ officials, the latrine has been constructed at one stretch. Using Government subsidy and putting own contribution, the HH have completed latrine construction in continues phase without delay.

Table No. 4.49. Duration or timeframe incurred to complete

Timeline	Frequency	Percentage
Less than 2 weeks	4	2.1
3-4 weeks	177	94.2
1-6 months	4	2.1
More than 13 months	3	1.6
Total	**188**	**100.0**

As informed by the HH respondents, the latrine is constructed at one time phase, wherein duration took place to complete construction of toilets as presented in table 4.49. Out of 188 respondents, majority 94.2 percent of the respondents specifies that 3-4 weeks has taken to construct latrine. A very small 2.1 percent of the respondents took less than 2 weeks and 1-6 months. 1.6 percent of the respondents took more than 13 months to construct latrine.

It is clear from the above table that a majority 94.2 percent of the respondents specifies that 3-4 weeks has taken to construct latrine.

Table No. 4.50. Opinion of HH respondents towards the plan of making changes to latrine in future

Response	Frequency	Percentage
Yes	161	85.6
No	27	14.4
Total	**300**	**100.0**

The table 4.50 explains plans of making improvement in future in latrine. Out of 188 respondents, a majority 85.6 percent of the respondents have plans in making improvement in latrine. A small 14.4 percent of the respondents don't have plans in making improvement in latrine in future.

It is clear from the above table that a majority 85.6 percent of the respondents have plans in making improvement in latrine.

Table No. 4.51. The kind of changes/ improvement that HH are intended to make to their latrine.

Changes/ plan	Frequency		Percentage	
	Yes	No	Yes	No
Line the pit	11	164	6.29	93.71
Improve walls	12	163	6.86	93.14
Improve the roof	4	171	2.29	97.71
Improve the slab	0	175	0.00	100.00
Get pan	0	175	0.00	100.00
Get pour flush pan	116	59	66.29	33.71
Add ventilation pipe to pit	49	126	28.00	72.00
Build Water storage tanks	121	54	69.14	30.86
Build bathing area	0	175	0.00	100.00
Build hand washing area	69	106	39.43	60.57
Build door	5	170	2.86	97.14
Move to inside the house	0	175	0.00	100.00
Other	4	171	2.29	97.71

As highlighted in table 4.51 explains the majority of the HH have opined that they wanted to make changes such as get pour flush pan (66.29%), add ventilated pipe to pit (28.00%), build water storage tank (69.14%), build hand washing area (39.43%), line the pit, improve walls and improve the roof are the few improvement that HH intended to make in future to their IHHL. It is clear from the above table that this signifies that HH are convinced in some sort towards proper utilization of latrine for good of the family health thereby to health of community as a whole.

Table No. 4.52. Response to latrine ever been emptied by Respondents

Response	Frequency	Percentage
Yes	37	19.8
No	151	80.2
Total	**188**	**100.0**

In response to the emptying of latrine pit, the HH have opined in the table 4.52 shows no prominence or intend to empty. Out of 188 respondents, majority 80.2 percent of the respondents had not emptied the pit ever. A notable 19.8 percent of the respondents had informed that they emptied latrine pit.

It is clear from the above table that a majority 80.2 percent of the respondents had not emptied the pit ever.

Table No. 4.53. Whether HH hired person to empty pit by Respondents

Reponses	Frequency	Percentage
Yes	7	3.7
No	181	96.3
Total	**188**	**100.0**

To empty out latrine pit, the table 4.53 displays that weather households hired some person for empty of pit. Out of 188 respondents, a majority 96.3 percent of the respondents didn't hired respondents to empty pit. A very small about 3.7 percent of the respondents have hired person to empty the latrine.

It is clear from the above table that a majority 96.3 percent of the respondents didn't hired respondents to empty pit.

Table No. 4.54. Place from which materials purchased or brought for building IHHL

Place where materials purchased	Frequency	Percentage
In your village	175	93.1
In your community	13	6.9
Total	**188**	**100.0**

The table no 4.54 explains from where the material purchased for building latrine. Out of 188 respondents, a majority 93.1 percent of the respondents said that they have purchased materials from their own village. A very small 6.9 percent of the respondents purchased the materials in their community.

It is clear from the above table that a majority 93.1 percent of the respondents said that they have purchased materials from their own village.

Table No. 4.55. The person arranged to purchase the materials for construction of IHHL

Person arranged	Frequency	Percentage
Hired person	11	5.8
Household	35	18.6
Both	142	75.6
Total	**188**	**100.0**

As table 4.55indicates that person arranged to purchase the materials for construction. Out of 188 respondents, majority 75.6 percent of the respondents said that they arranged both hired and household person to purchase the materials for construction. A notable 18.6 percent of the respondents arranged household person to purchase the materials for construction. A very small 5.8 percent of the respondents arranged hired person to purchase the materials for construction.

It is clear from the above table that a majority 75.6 percent of the respondents said that they arranged both hired and household person to purchase the materials for construction.

4.6. NON-LATRINE OWNERS

This section of the analysis provided the perception of non-latrine owners. Researcher paid extensive effort to get the perception of non-latrine owners to identify reasons why they have not been able to construct the latrine. The objective of this section is to analyse non-latrine owners that do not own a latrine, to understand the mechanisms underlying this behaviour and derive interventions tailored specifically for them.

Table No. 4.56. Household ever gone through about or discussed building a latrine for your family and when was the last time respondent discussed this

Has your household ever gone through about or discussed building a latrine for your family	If yes, when was the last time you discussed this				Total
	Less than 1 month ago	1-6 months ago	7-12 months ago	More than 1 year ago	
Yes	2	73	3	9	87
	2.3	83.9	3.4	10.3	**100.0**
No	0	22	0	3	25
	0.0%	88.0	0.0	12.0	**100.0**
Total	**2**	**95**	**3**	**12**	**112**
	1.8	**84.8**	**2.7**	**10.7**	**100.0**

The above table no 4.56 describes the discussion building latrine between households and time of the discussion done between family members. Out of 112 respondents, 87 respondents said yes they had a discussion on building latrine. Of them majority 83.9 percent of the respondents had discussion about building latrine in last 1 to 6 months ago. A notable 10.3 percent of the respondents had discussed 1 year ago, a very small 3.4 percent and 2.3 percent of the respondents had discussed 7 to 12 months ago and less than 1 month ago. Those who have not discussed about building latrine are 25.

Hence it is clear from the above table that majority 83.9 percent of the respondents had discussion about building latrine in last 1 to 6 months ago.

Table No. 4.57. Has your household ever gone through about or discussed building a latrine for your family and if no, who in your household would make the final decision to build a latrine

Has your household ever gone through about or discussed building a latrine for your family	If no, who in your household would make the final decision to build a latrine?					Total
	Head	Spouse	Husband and Wife jointly	All (join decision)	Other specify	
Yes	11	23	50	3	0	87
	12.6	26.4	57.5	3.4	0.0	**100.0**
No	2	5	14	3	1	25
	8.0	20.0	56.0	12.0	4.0	**100.0**
Total	**13**	**28**	**64**	**6**	**1**	**112**
	11.6	**25.0**	**57.1**	**5.4**	**0.9**	**100.0**

The above table no 4.57 explains about household ever gone through about or discussed building a latrine for your family and if no, who in your household would make the final decision to build a latrine. Out of 112 respondents, 87 respondents said that the household ever discussed about building a latrine. Of them majority 57.5% of the respondents said that husband and wife together discuss about building latrine. A significant 26.4% of the respondents said that spouse take decision in building latrine. A notable 12.6% of the respondents said head of the family is person who takes decision on building latrine. A very small 3.4% of the respondents said all family members take part in decision in building latrine.

Those who have said no are 25. Of them majority 56.0 percent of the respondents said that husband and wife together discuss about building latrine. A good number 20.0 percent of the respondents said that spouse take decision in building latrine. A small number 12.0 percent of the respondents said all family members take part in decision in building latrine. A very small 8.0v of the respondents said head of the family is person who takes decision on building latrine.

It is clear from the above table that majority 57.5 percent of the respondents said that husband and wife together discuss about building latrine and 56.0 percent of the respondents said that husband and wife together discuss about building latrine.

Table No. 4.58. Response towards identifying mason to build latrine

Response	Frequency	Percentage
Yes	89	79.7
No/Not yet identified	23	20.3
Total	**112**	**100.0**

As preparatory steps towards building IHHL, the identifying the right person for job is equally important. Hence in this regards HH were asked whether they have suitable person to build latrine and the response to this has been presented in table 4.58. Out of 112 respondents, majority 79.7 percent of the respondents had identified mason to build latrine. A notable 20.3 percent of the respondents had not identified.

It is clear from the above table that a majority 79.7 percent of the respondents had identified mason to build latrine.

Table No. 4.59. The place from which person/ mason is identified by the respondents

Place	Frequency	Percentage
From village	67	75.9
From Outside	22	24.1
Total	**89**	**100.0**

Normally every village will have mason with whom every households in the village are familiar. The table 4.59explains the place where household were identified mason. Out of 89 respondents, majority 75.9 percent of the respondents have identified from village itself and 24.1 percent of the respondents had identified mason from outside of the village.

It is clear from the above table that majority 75.9 percent of the respondents have identified from village itself.

Table No. 4.60. The reason to hire this person by the respondents

Reason	Frequency	Percentage
Had hired before	6	5.1
Relative/ Friend	3	2.6
Has good reputation	103	91.3
Total	**112**	**100.0**

The table no 4.60 describes the reason choosing or hiring local mason/ person who builds latrines is largely because the person is well known to respondent. Since mason lives in the same village, the household respondents are very familiar to the work of mason and his quality work. Having good reputation with his work is one of key reason why the HH chose to hire the person. Out of 112 respondents, majority 91.3 percent of the respondents had hired a mason because he has good reputation. A very small 5.1 percent of the respondent hired because mason has hired before and 2.6 percent of the respondents hired because mason is a relative.

It is clear from the above table that a majority 91.3 percent of the respondents had hired a mason because he has good reputation.

Table No.4.61 the place from where the latrine building materials are to be purchased

Place	Frequency	Percentage
In my village	93	83.7
In my commune	19	16.3
Total	**112**	**100**

The table no 4.61explain that from where households purchase the materials to build latrine. Out of 112 respondents, majority 83.7 percent of the respondents said they will purchase from their own village and rest 16.3 percent of the respondents mentioned that they buy it from their commune.

It is clear from the above table that majority 83.7 percent of the respondents said they will purchase from their own village. The materials are available in their village gram panchayat mentioned by the respondents. It is clear indication that, the build latrine, materials readily locally available within the village. This significantly reduced cost burden of HH avoiding long distance of travelling.

Table No. 4.62. Availability of site to build latrine by the respondents

Response	Frequency	Percentage
Yes	106	94.9
No	06	5.1
Total	**112**	**100.0**

As presented in table 4.62discusses about the non-latrine owners as they have confirmed the availability of the site to build latrine. Out of 112 respondents, a majority 94.9 percent of the respondents said that they have site to build latrine. Only 5.1 percent of the respondents said that they did not choose site to construct the latrine.

It is clear from the above table that a majority 94.9 percent of the respondents said that they have site to build latrine.

Table No. 4.63. The marginal amount required to construct latrine by the respondents

In rupees (Rs)	Frequency	Percentage
15000/-	22	19.1
20000/-	90	80.9
Total	**112**	**100.0**

The above table no 4.63 depicts that the marginal about required to construct latrine by the respondents. Out of 112 respondents, majority 80.9 percent of the respondents have opined that they require Rs. 20,000/- to build latrine and 19.1 percent of the respondents said Rs. 15,000/- is required to build latrine.

It is clear from the above table that majority 80.9 percent of the respondents have opined that they require Rs. 20,000 to build latrine.

Table No. 4.64. Response on money saved to building a latrine by the non-latrine owners

Responses	Frequency	Percentage
Yes	04	3.4
No	108	96.6
Total	**112**	**100.0**

The above table no 4.64 explains the response on money saved to building a latrine by the non-latrine owners. Out of 300 respondents, a majority 96.6 percent of the respondents who are non-latrine owners were not saved money build latrine. Only about 3.4 percent respondents have confirmed that they set aside saving to construct latrine for their family.

It is clear from the above table that a majority 96.6 percent of the respondents who are non-latrine owners were not saved money build latrine.

Table No: 4.65 Response towards taking micro-finance loan

Response	Frequency	Percentage
Yes	12	10.7
No	100	89.3
Total	**112**	**100.0**

The above table no 4.65 describes weather households have taken lone taken from micro-finance. Out of 112 respondents, a majority 89.3 percent of the respondents don't have any concern about taking loan from micro-finance. Only 10.7percent of the respondents have mentioned that they have concern about the taking loan from micro-finance.

It is clear from the above table that a majority 89.3percent of the respondents don't have any concern about taking loan from micro-finance.

4.7. SOURCE OF WATER:

Water supply and sanitation facilities are essential for human development. They result in various health and nutritional benefits which in turn have a positive impact on child mortality and morbidity. Bartram and Cairn cross (2010) found that adequate sanitation and safe drinking water could avoid 2.4 million deaths (4.2% of all deaths) every year globally. Children from developing countries account for the majority of these deaths mainly due to diarrhoea and subsequent malnutrition. The key to controlling diarrhoea deaths is to focus on three interdependent core issues: water, sanitation and hygiene (WASH). WASH is one of the strategic programmes of the United Nations Children's Fund (UNICEF) to achieve 'sustainable water, sanitation services, and the promotion of hygiene, with a focus on reducing inequalities especially for the most vulnerable children' (UNICEF, 2016). The present article focuses on the first two aspects and tries to review the progress in India.

The Quality of Water in India:

As estimated and reported by United Nations (UN), globally, the progress in providing safely managed drinking water has improved significantly in the last two decades. It is however reported that the growth rate has increased from 61% to 71% between 2001 and 2017. The UN has estimated that around 785 million people in the world do not have access to even basic drinking water. However, in India, the NSS survey has considered 'improved sources of drinking water' as a criterion instead of 'safely managed drinking water' as set by the UN. Moreover, comparing different NSS survey data is challenging owing to the different methodologies adopted in the process of data collection. For example, the 69th round of the survey used 13 principal sources which increased to 17 in the 76th round survey. Figure 1 shows that in 2012, 88.5 percent of households in rural India had improved sources of drinking water, while it was 95.3percent in urban India. It increased to 94.6 percent and 97.4 percent, respectively, in rural and urban India in 2018. However, ensuring the quality of water has remained a great challenge for the country and so has the issue of sanitation and hygiene. A total of 91.2 percent of households in the urban areas have access to toilets whereas the figure stands at 56.6 percent in the rural areas. The results further shows that the improved source of drinking water has been primarily due to piped water supply which is estimated at 65 percent in 2018. Similarly, non-piped drinking water services have increased in both the survey years. The Twelfth Five-Year Plan aimed to

providing at least 55 percent of rural households with a piped water connection at the end of the plan period, but the actual figure stood at 32.9 percent. This signifies an improvement in our efforts on the various aspects of providing improved drinking water at all times to households in the rural areas of the country.

Table No. 4.66. The main source of drinking water depended by household members during dry season

Source	Frequency	Percentage
Piped water into dwelling	12	4.0
Piped water to yard/plot	6	2.0
Public tap/stand pipe	161	53.7
Tube well/bore well	110	36.7
Bottled water	4	1.3
Others Specify	2	0.7
No response	5	1.7
Total	**300**	**100.0**

The table presented in 4.66 shows about the different types of sources depended by the households to collect drinking water. Out of 300 respondents, evidently it is clear that a majority 53.67 percent of the respondents opined that they collect drinking water from public tap/standpipe among. A good number 36.7 percent of the respondents main source of drinking water depended by tube well/bore well. A very small 4.0 percent of respondents use piped water into dwelling; 2.0 percent use piped water to yard; 1.3 percent use bottled water; 0.7 percent use other sources and 1.7 percent of the respondents has not responded.

It is clear from the above table that majority 53.67 percent of the respondents opined that they collect drinking water from public tap/standpipe among.

Table No. 4.67. Distance takes to go to the main source to get water and come back

Distance	Frequency	Percentage
On site	275	93.2
Off-site	16	5.4
Don't know	9	1.4
Total	**300**	**100.0**

The respondents have opined about the distance and place in which drinking water is being collected. The table no 4.67 provides details about the distance takes to go to the main source to get water and came back. Out of 300 respondents, apparently it indicates that a vast majority 93.2 percent of households collect water from the main source available at onsite among. Whereas a very small 5.4 percent of the households collect water off-site for which they have to take a distance walk and 1.4 percent of the respondents don't know about the distance.

It is clear from the above table that a majority 93.2 percent of households collect water from the main source available at onsite among.

Table No. 4.68.Amount paid for drinking water from the main source by the respondents

Amount(Rs)	Frequency	Percentage
2.00	34	11.3
3.00	119	39.7
5.00	2	0.7
10.00	11	3.7
15.00	6	2.0
20.00	18	6.0
25.00	30	10.0
30.00	40	13.3
35.00	2	0.7
40.00	20	6.7
64.00	9	3.0
Do not pay water bill	9	3.0
Total	**300**	**100.0**

The table no 4.68 presented below explains how much household pay for drinking water for the main source. Out of 300 respondents, a good number 39.7 percent of the households paid Rs.3 towards drinking water bill for the usage. A considerable 13.3 percent and 11.3 percent of households pay Rs. 30 and Rs. 2 respectively. There are 10.0 percent of the households paid Rs. 25 and Rs.20 paid by the 6.7 percent.

A very small 3.7 percent of the respondents pay Rs.10.00, 3.0 percent of the respondents pay Rs. 64.00, 2.0 percent of the respondents pay Rs. 20.00. Hence, it is clear from the table that a good number 39.7percent of the households paid Rs.3 towards drinking water bill for the usage. Generally in rural Karnataka water bills are not collected on monthly basis, however there is system of bulk bill collection irrespective of whatever the usage level in Kilolitre (KL). There is no such limitation for the family to use water as compared to city level usage which counted in Kilolitre (KL) and the rate generated as against to the same. In this case, the households have opined that there are no such stipulated norms for usage of water in rural villages however Grama Panchayat is collecting water bill combined with revenue bills under the house tax but there is specific bills as such with regard to usage of water.

Table No. 4.69. The main source of drinking water depended by household members during rainy season

Source	Frequency	Percentage
Piped water into dwelling	8	2.7
Piped water to yard/plot	16	5.3
Public tap/stand pipe	237	79.0
Tube well/bore well	22	7.3
Protected spring	4	1.3
Bottled water	4	1.3
Surface water (river, dam lake, pond, stream, canal and irrigation channels)	4	1.3
Don't know	5	1.7
Total	**300**	**100.0**

The table no 4.69 defines the main source of drinking water depended by the households during rainy season. Out of 300 respondents, majority 79.0 percent of the respondents are depended on public taps. A small 7.3 percent and 5.33 percent of the respondents depended on tube well and piped water to yard as main source of drinking water during rainy season. A very small 2.6 percent of the respondents depended on piped water into dwelling, 1.3 percent of the respondents depended on protected spring, bottled water and surface water respectively.

It is clear from the table that majority 79.0 percent of the respondents are depended on public taps as main source of drinking water during rainy season. Vijayapura district which opted for this study do not carries much of ground water eventually to fetch either to tube well and bore wells. Even though water fetched though bore well and tube well do not provide potable drinking water as there significant amount of chloride in the water harmful in nature for physical development of children and even all those who consume such water.

Table No. 4.70. Distance takes to go to the main source to get water and come back during rainy season

Availability of water and it's Distance	Frequency	Percentage
On site	160	53.33
Delivered to home	133	44.33
Off-site	2	0.67
Don't know	5	1.67
Total	**300**	**100.0**

There is significant response from the household as indicated in table 4.70. Out 300 respondents, majority 53.3 percent of the respondents said that drinking water is available at on site. A significant number 44.3 percent of the respondents have said that drinking water is delivered to home. A very small 0.7 percent of the respondents said that distance between to get water and come back to off site.

It is clear from the above table that majority 53.3 percent of the respondents said that drinking water is available at on site.

Table No. 4.71. The usage of drinking water per day from the secondary source by the Respondents

Water usage in kilolitre(KL)	Frequency	Percentage
2.00	16	5.42
5.00	6	2.03
10.00	7	2.37
15.00	2	0.68
20.00	66	22.37
25.00	45	15.25
30.00	114	38.64
35.00	4	1.36
40.00	20	6.78
45.00	2	0.68
50.00	2	0.68
64.00	9	3.05
90.00	2	0.68
Total	**300**	**100.0**

The usage level of secondary source as opined by the households is displayed in table 4.71. Out of 300 respondents, a very good number 38.4 percent of the respondents water usage in kilolitre is 30.00 (KL). A significant number 22.7 percent of the respondents water usage per day is 20.00 (KL) per day. A good number 15.5 percent of households per day usage of water is 25.00 KL. A small about 6.78 percent and 5.2 percent of the households were opined that they use 40.00 KL drinking water per day. A very small 2.7 percent and 2.3 percent of the respondents waster usage in per day is 10.00 and 5.00 KL.

Hence it is clear from the table that a very good number 38.4 percent of the respondents secondary source of drinking water collected from different water source is 30.00 (KL).

Table No. 4.72. Amount pay for drinking water from the secondary source by the respondents

Amount paid (Rs)	Frequency	Percentage
1.00	2	0.7
2.00	26	8.7
3.00	148	49.3
5.00	2	0.7
10.00	6	2.0
15.00	6	2.0
20.00	32	10.7
25.00	24	8.0
30.00	20	6.7
40.00	16	5.3
64.00	9	3.0
No response	9	3.0
Total	**300**	**100.0**

Relatively to the amount paid for drinking water from main source, the table 4.72 also reflects the same. Out of 300 respondents, nearly half 49.3percent of the respondents pay Rs. 3.00 for drinking water for the secondary source. A considerable 10.7 percent of the respondents pay Rs. 20.00 for drinking water from secondary source. A small 8.7 percent Pay Rs. 2.00; 8.0 percent pay Rs. 25.00; 6.7 percent pay Rs. 30.00; 5.3 percent pay Rs. 40.00 for drinking water for the secondary source. A very small 3.0 percent; 2.0 percent of the respondents pay Rs. 10.00, Rs. 15.00 and Rs. 64.00 As similar to the context of payment done to main source drinking water herein too a vast majority of 49.33 percent households have responded that they pay Rs.3.00.

It is clear from the above table that nearly half 49.3 percent of the respondents pay Rs. 3.00 for drinking water for the secondary source. Presumably unlike to main source for drinking water there is no such limitation for the family to use water as compared to urban level wherein the count of usage level recorded in Kilolitre (KL) and the rate generated as against to the same. In this case, the households have opined that there are no such stipulated norms for usage of water in rural villages however Grama Panchayat is collecting water bill combined with revenue bills under the house tax but there is specific bills as such with regard to usage of water.

Table No. 4.73.The reason for disliking drinking water from the main source during dry season

Reasons	Frequency	Percentage
Too far	12	4.0
Not enough supply	24	8.0
Long weighting time to collect	232	77.3
Long waiting tie to treat water	17	5.7
The area surrounding the source is not clean	2	.7
Others specify	8	2.7
Don’t know	5	1.7
Total	**300**	**100.0**

The reasons as highlighted by the household respondents is presented in table 4.73. Out of 300 respondents, a majority 77.3 percent of the respondents mentioned that long waiting time to collect drinking water is the reason they dislike the drinking water. A small 8.0 percent of the respondents dislike because drinking water is not enough supply; and 5.7 percent of the respondents dislike because long waiting tie to treat water. A very small 4.0% of the respondents said that they dislike because it is too far.

It is clear from the above table that a majority 77.3 percent of the respondents mentioned that long waiting time to collect drinking water is the reason they dislike the drinking water.

Table No. 4.74. The reason for disliking drinking water from the main source during rainy season

Reason for dislike	Frequency	Percentage
Too far	4	1.3
Not enough supply	30	10.0
Long weighting time to collect	226	75.3
Have to treat water	4	1.3
Long waiting tie to treat water	16	5.3
Looks dirty	2	.7
The area surrounding the source is not clean	2	.7
Others (specify)	4	1.3
Don’t know	12	4.0
Total	**300**	**100.0**

The above table no 4.74 explains about reasons for disliking drinking water from the main source during rainy season. Out of 300 respondents, a majority 75.3 percent of the respondents dislike drinking water from the main source because long weighting time to collect. A small 10.0 percent of the respondents dislike because not enough supply of drinking water from main source. A very small 5.3 percent of the respondents dislike because drinking water from main source long waiting tie to treat water. 4.0 percent of the respondents disliking because they need to treat water and too far respectively, 0.7 percent of the respondents dislike drinking water from the main source during rainy season because looks dirty and the area surrounding the source is not clean respectively.

It is clear from the above table that a majority 75.3 percent of the respondents dislike drinking water from the main source because long weighting time to collect.

Table No. 4.75. The liking/ advantages about drinking water from main source

Reasons for liking main drinking water source in Dry season	Yes	No	Total
Doesn't take a long time	18 (6.0)	282 (94.0)	300 (100.0)
Good health	272 (90.7)	28 (9.3)	300 (100.0)
Personal safety/security	37 (12.3)	263 (87.7)	300 (100.0)
Good taste	260 (86.7)	40 (13.3)	300 (100.0)
Convenient	39 (13.0)	261 (87.0)	300 (100.0)
No smell	7 (2.3)	293 (97.7)	300 (100.0)
Clean/good colour	29 (9.7)	271 (90.3)	300 (100.0)
Prestige	5 (1.7)	295 (98.3)	300 (100.0)
Good for Visitors	5 (1.7)	295 (98.3)	300 (100.0)

The researcher in this context is also emphasized to collect the information about the liking side and advantages for having collecting drinking water from main source rather just projecting negative and problematic side. It is evident from the table 4.75 describes the liking opinion about drinking water from main source. Out of 300 respondents, very small 6.0 percent; 12.3 percent; 13.0 percent; 2.3 percent; 9.7 percent and 1.7 percent of the respondents like main drinking water source in dry season because it doesn't take long time, to maintain personal safety, have convenient, water is not having smell, water is clean and it is good for visitors. In the other hand majority 90.7 percent of the respondents said it is good for health and 86.7 percent of the respondents like water because it is having good taste.

Furthermore, majority 94.0 percent, 87.7 percent, 87.0 percent, 97.7 percent, 90.3 percent and 98.3 percent of the respondents don't like this drinking water source in dry season because it doesn't take long time, to maintain personal safety, have convenient, water is not having smell, water is clean, and it is good for visitors. Whereas, very small 9.3 percent and 13.3 percent of the respondents don't like it is good for health and it is having good taste.

Table No. 4.76. Satisfaction with drinking water quality (Dry season)

Opinion	Frequency	Percentage
Very Satisfied	37	12.3
Satisfied	234	78.0
Unsatisfied	20	6.7
No response	9	3.0
Total	**300**	**100**

As presented in table no 4.76 reveals the opinion of the respondents the level of satisfaction composed in the survey. Out of 300 respondents, majority 78.0 percent of the respondents are satisfied on quality of drinking water available. A considerable about 12.3 percent of the household stated that they are very satisfied with quality of the water. Interestingly, there are about 6.67 percent of the respondent found unsatisfied and about 3.00% of the respondents did not give any response either.

It is clear from the above table that majority 78.0 percent of the respondents are satisfied on quality of drinking water available.

Table No. 4.77. Satisfaction with drinking water quality during Rainy season

Opinion	Frequency	Percentage
Very Satisfied	39	13.0
Satisfied	230	76.7
Unsatisfied	20	6.7
Very Unsatisfied	2	0.6
No response	9	3.00
Total	**300**	**100.0**

The comparison with dry/summer season and rain season on the satisfaction level of the respondent is derived in table no 4.77. Out of 300 respondents, it is found that a majority 76.7 percent of the respondents are satisfied on quality of drinking water available. There are about 13.0 percent of the household respondents are very satisfied with quality of the water and interestingly, there are about 6.7 percent of the respondent found unsatisfied and about 0.6 percent of the respondents are very unsatisfied and 3.0 percent of the respondents did not give any response.

Is clear from the above table that a majority 76.7 percent of the respondents are satisfied on quality of drinking water available.

Table No. 4.78. Person who usually household collect water

Person who collects water	Frequency	Percentages
Adult women	173	57.7
Adult man	120	40.0
Don’t know	2	0.7
Not responded	5	1.6
Total	**300**	**100.0**

The above table that no 4.78 explains person who usually household collect water by the respondents. Out of 300 respondents, a majority 57.7 percent of adult women collect water. A good number about 40.0 percent of the adult man who also collecting drinking water from the locally available water source. A very small about 1.6 percent of them did not provide responses.

It is clear from the above table that a majority 57.7 percent of adult women collect water. Women are largely bound to collect the water and this makes over burden or additional work for them to cover up for their family. Filling water by women is composed and attributed that insufficient water if at all women did not pay attention to fill the water leads to family members to go out for OD. If sufficient water is available in latrine place, the family members found comfortable using it.

Table No. 4.79. Response towards of treating of water to make it safe for drinking

Response	Frequency	Percentage
Yes	287	95.7
No	4	1.3
Don’t know	4	1.3
No response	5	1.7
Total	**300**	**100.0**

The table 4.79 predominately explains that there is some sort of awareness among the households where they inclined the habit of treating the water safe before use. Out of 300 respondents, majority 95.7 percent of the households who responded that they treat safe water before use. A very small 1.3 percent of the respondents don’t do this and don’t know about this and 1.7 percent of the respondents had not given response to this.

It is clear from the above table that majority 95.7 percent of the households who responded that they treat safe water before use.

Table No. 4.80. Reason for treating water before drinking

Opinion	Frequency	Percentage
Contaminated with dirt	23	7.7
Contaminated with faeces/human/animal waste	4	1.3
Contaminated with germs, bacteria and virus	10	3.3
Good for health (appearance)	254	84.7
Looks bad	4	1.3
Others	5	1.7
Total	**300**	**100.0**

The above table no 4.80 describes about Reason for treating water before drinking. Out of 300 respondents, a majority 84.7 percent respondents treat water safe before use because it improves good health condition. A small 7.7 percent of the respondents treat water safe before use because it contaminated with dirty. A very small 3.3 percent of the respondents opined that the reason for treating water is to prevent water from contaminated with germs, bacteria and virus.

It is clear from the above table that majority 84.7percent respondents treat water safe before use because it improves good health condition. This is one of the significant development and level of awareness among the households. This can be attributed that household members are either educated or equipped greater knowledge about water usage.

Table No. 4.81. Method of treating of drinking or potable water

Method of treating water as opined by the response	Frequency	Percentage
Boil	284	94.7
Use a ceramic water filter	7	2.3
Let it sand and settle	4	1.3
Others	5	1.7
Total	**300**	**100.0**

As presented in table no 4.81 is explained about the method adopted by households to treat drinking water. Out of 300 respondents, majority 94.7 percent of the respondents boil the water before use. A very small 2.3 percent of the respondents who were also said that they use a ceramic water filter and 1.3 percent of the respondents said that let it sand and settle method to filter the water before drinking it.

It is clear from the above table that majority 94.7 percent of the respondents boil the water before use.

Table No. 4.82. Frequency of treat your water before drinking by Respondents

Frequency/ often	Frequency	Percentage
Always	246	82.00
Usually	8	2.67
Sometimes	41	13.67
Don’t know	5	1.67
Total	**300**	**100.0**

The frequency of treating water determines the awareness and sensitization level of the households. It also specifies about family valuing to take precautionary measures to treat drinking water. It evident from the table 4.82 that a majority about 82.0 percent of the respondents treat water every time before used for drinking. A notable 13.7 percent of them said that some time they treat water before drinking. A very small 2.7 percent of the respondents said they usually treat water before drinking.

It is clear from the above table that a majority about 82.0 percent of the respondents treat water every time before used for drinking.

Table No. 4.83. Level of Importance treating water for drinking

Response	Frequency	Percentage
Very important	285	95.00
Quite important	6	2.00
Don’t know	9	3.00
Total	**300**	**100.0**

The above table no: 4.83 significantly provides the information on level of importance treating water for drinking by the respondents. Out of the 300 respondents, majority 95.0 percent of the respondents feels that treating water is “very important” to keep the health of children and family safe and protected. A very small 2.0 percent of the respondents feel it is quite important. 3.0% of the respondents don’t know about this.

It Is clear from the above table that majority 95.0 percent of the respondents feels that treating water is “very important” to keep the health of children and family safe and protected.

4.8. HYGIENE:

The concept of hygiene varies amongst individuals and amongst cultures. Personal hygiene and sanitation are interrelated and both can contribute to mode of transmission of disease. As part of a larger community survey, we studied the basic personal hygiene habits and sanitation status of a rural community to find out if practices in this rural community are acceptable.

Personal hygiene is practices performed by an individual to care for one's bodily health and well-being through cleanliness. Many people equate hygiene with 'cleanliness' but hygiene is a broad term including personal habits choices as how frequently to bathe, wash hands, trim fingernails and change clothing. Also includes keeping the environment clean and pathogen free.

The level of personal hygiene is abysmal in rural Indian and hence, is the root cause of various health problems. People generally bath and wash clothes in rivers and pollute their primary source of water. They do not wear clean clothes, nor do they pay any attention to washing their hands, or taking care of their nails, feet, teeth, and hair. Coughing and sneezing directly on people's faces and nose are a common practice there. All these habits of people in a rural area become the root cause of many health hazards.

They do not have proper toilets either. Open field defecation contaminates the soils; therefore, it becomes the cause of the spread of many diseases causing pathogens and makes people ill.

Table No. 4.84. The Frequency washing hands with soap by the respondent

Washing hands	Frequency	Percentage
More than three times per day	252	84.0
Two to three times per day	29	9.7
Once per day	14	4.7
No response	5	1.7
Total	**300**	**100.0**

The table no 4.84 explain how often wash their hand with soap in a day by the respondents. Out of 300 respondents, majority 84.0 percent of the respondents wash their hands with more than three times in a day. A considerable 9.7 percent of the respondents wash their hands two to three times in a day. A very small 4.7 percent of the respondents wash their hands once in a day and 1.7 percent of the respondents have not responded to this.

It is clear form table that majority 84.0 percent of the respondents wash their hands with more than three times in a day.

Table No. 4.85 Reasons of Washing Hands by the Respondents

Reasons	Yes	No	Total
To remove dirty / may clean	287 (95.7)	13 (4.3)	300 (100.0)
Personal Appearance to look good	52 (17.3)	248 (87.3)	300 (100.0)
To make the smell good	9 (3.0)	291 (97.0)	300 (100.0)
To prevent diseases	103 (34.3)	197 (65.7)	300 (100.0)

The above table no 4.85presents the reasons for washing hands with soap by the respondents. Out of 300 respondents, majority 95.7 percent of the respondents wash their hands to remove dirty. A very small 4.3 percent of the respondents they don't wash hands to remove dirty. Out of 300 respondents, a small 17.3 percent of the respondents wash their hands to look good. A majority 87.3 percent of the respondents don't wash their hands to look good.

Out of 300 respondents, majority 97.0 percent of the respondents don't wash their hands to make the smell good. A very small 3.0 percent of the respondents wash their hands to smell good.

Out of 300 respondents, majority 65.7 percent of the respondents don't wash their hands to prevent diseases. A notable 34.3% of the respondents wash their hands to prevent diseases.

Table No. 4.86. When do They Wash hands with Soap

Time of washing hands	Yes	No	Total
When they are dirty	49 (16.3)	251 (83.7)	300 (100.0)
Returning to the home	116 (38.7)	184 (61.3)	300 (100.0)
Before eating	260 (86.7)	40 (13.3)	300 (100.0)
After eating	17 (5.7)	283 (94.3)	300 (100.0)
Before going to sleep	8 (2.7)	292 (97.3)	300 (100.0)
Before preparing food	243 (81.0)	57 (19.0)	300 (100.0)
After walking up	5 (1.7)	295 (98.3)	300 (100.0)
Before washing baby	7 (2.3)	293 (97.7)	300 (100.0)
After washing baby	17 (5.7)	283 (94.3)	300 (100.0)

The above table no 4.86 presented details about when respondents wash their hands. Out of 300 respondents, a very small 16.3 percent of the respondents wash their hands with soap when they are dirty and majority 83.7 percent of the respondents don't wash their hands with soap. Majority 61.3 percent of the respondents don't wash their hands with soap when they return to home and a notable 38.7 percent of the respondents wash their hands with soap when they return to home. Majority 86.7 percent of the respondents wash their hands with soap before eating and 13.3 percent of the respondents don't wash with soap before eating. A very small 5.7 percent of the respondents don't wash their hands with soap after eating and 94.3 percent of the respondents don't wash their hands with soap after eating. A very small 2.7 percent of the respondents wash their hands with soap before going to sleep and majority 94.3 percent of the respondents don't wash their hands with soap before going to sleep. A majority 81.0 percent of the respondents wash their hands with soap before preparing

food and a notable 19.0 percent of respondents don't wash their hands. A very small 1.7 percent, 2.3 percent and 5.7 percent of the respondents wash their hands with soap after walking up, before washing baby and after washing baby. A majority 98.3 percent, 97.7percent and 94.3 percent of the respondents don't wash their hands with doing these activities.

It is clear from the above table majority of the respondents are not having much awareness on the washing hands. It may be true because they are not provided education on hygiene. In this regard households are need an awareness campaign and education too.

Table No. 4.87. Wash hands with soap in a designated hand washing place and where do you usually wash your hand with soap by the respondents

You wash hands with soap in a designated hand washing place	Where do you usually wash your hand with soap?					Total
	At the water source	In the latrine	Near the latrine	In the kitchen area	Not Applicable	
Yes	0	0	0	0	32	32
	(0.0)	(0.0)	(0.0)	(0.0)	(10.7)	(10.7)
No	224	22	5	17	0	268
	(74.7)	(7.3)	(1.7)	(5.7)	(0.0)	(89.3)
Total	**224**	**22**	**5**	**17**	**32**	**300**
	74.7	**7.3**	**1.7**	**5.7**	**10.7**	**100.0**

The table no 4.87 explained about washing hands in designated washing place and where do households wash their hands with soap. Out of 300 respondents, majority 89.3 percent of the respondents don't wash their hands with soap in designated hand washing place. Of them 74.7 percent of the respondents wash their hands at water source; 7.3 percent of the respondents in the latrine; 5.7 percent of the respondents in kitchen area and a very small 1.7 percent of the respondents near the latrine wash their hands with soap. A small 10.7 percent of the respondents wash their hands with soap in designated hand washing place.

It is clear from the above table that majority 89.3percent of the respondents don't wash their hands with soap in designated hand washing place. It is found that no sensitization among the HH respondents to wash hand at the designated place such as at washing basin, bathroom, and outside yard where the water kept for washing hand. The response of the HH is evident that they are least concerned about the designated place to wash hand; this implies that about importance given to washing hand.

Table No. 4.88. Preventive measures adopted by HH to prevent the children from diarrhoea.

Preventive measures	Frequency	Percentage
Pray to spirits/ancestors	8	2.7
Cook food properly/eat soon after cooking	19	6.3
Boil drinking water	8	2.7
Wash vegetable with clean water	7	2.3
Wash hands with soap after defecation	29	9.7
Wash hands with soap before preparing food/eating	26	8.7
Wash hands wash soap after cleaning child's anus	4	1.3
Clean cooking and eating utensils	3	1.0
Don't know	196	65.3
Total	**300**	**100.0**

The table no4.88 signifies about preventive measures adopted by household to prevent the children from diarrhoea. Out of 300 respondents, majority 65.3 percent of the respondents don't know what preventive measure need to be taken to prevent children from diarrhoea. A small 9.7 percent of the respondents wash hand with soap after defecation; 8.7 percent of the respondents wash hand with soap before preparing food/eating; 6.3 percent of the respondents cook food properly/eat soon after cooking. A very small 2.7 percent of the respondents pray to spirits and boil drinking water. 2.3% of the respondents wash vegetable with clean water; and 2.3 percent of the respondents wash hand after cleaning child's anus and clean cooking and eating utensils.

It is clear from the above table that majority 65.3 percent of the respondents don't know what preventive measure need to be taken to prevent children from diarrhoea. It may be true because households are having less knowledge about eh hygiene.

4.9. COMMUNICATION:

In this section of the report mainly deals with HH participation in community engagements and their level of participation is presented in this section.

Table No. 4.89. People in the household are members of a community group

Avg. no. of members HH	Frequency	Percentage
0	78	26.0
1	163	54.3
2	40	13.3
3	14	4.7
No response	5	1.7
Total	**300**	**100.0**

As presented in table no4.89, the average numbers of households are members of a community group. As it is found out of 300 respondents, majority 54.3 percent of respondents one household have community group membership. A notable number 13.3 percent of respondents two households have community group membership. A very small 4.7 percent of the respondents three households have community group membership. Rest, a significant 26.0 percent of the respondents none of households are community group membership.

It is clear from the table that majority 54.3 percent of respondents one household have community group membership.

Table No. 4.90. Frequency of travelling outside of the village by the Respondents

Travelling outside the villages	Frequency	Percentage
More than once per week	10	3.3
Once per week	60	20.0
1-2 time per month	146	48.7
Less than once per month	48	16.0
Less than once per year	16	5.3
Rarely	4	1.3
Never	11	3.7
No response	5	1.7
Total	**300**	**100.0**

The table no4.90 defines about frequency of travelling outside the village by the household. Out of 300 respondents, nearly half 48.7 percent of respondents travel twice in a month outside of the village. A significant 20.0 percent of the respondents travel once in a week to outside of the village. A good number 16.0 percent of the respondents travel less than once in a month travel outside of the village. A very small percent of the respondents travel less than once in a year (5.3%); 3.3 percent of the respondents travel more than once in a week and 1.3 percent of the respondents rarely travel outside the village.

It is clear from the table that nearly half 48.7 percent of respondents travel twice in a month outside of the village.

Table No. 4.91. Trust worthy information about building or purchasing sanitation and water products

Source of information	Very good information source	Acceptable/ average information source	Not a good information source	Don't now	Total
Mason	42 (14.0)	254 (84.7)	4 (1.3)	0 (0.0)	300 (100.0)
Concrete ring producer	233 (77.7)	58 (19.8)	8 (2.7)	0 (0.0)	300 (100.0)
Shop/seller	23 (7.7)	235 (78.3)	25 (8.3)	17 (5.7)	300 (100.0)
Government officer	240 (80.0)	51 (17.0)	9 (3.0)	0 (0.0)	300 (100.0)
NGO workers	225 (75.0)	60 (20.0)	8 (2.7)	7 (2.3)	300 (100.0)

The table presented below in 4.91 explicit the information shared by various community members while purchasing or building sanitation and water product is trustworthy according to the household. Out of 300 respondents, majority 84.7 percent of the respondents said that the information about building or purchasing sanitation and water products shared by mason is acceptable/ average information source. A notable 14.0 percent of the respondents said that the information shared by mason is very good source. A very small 1.3 percent of the respondents said that it is not a good source.

Majority 77.7 percent of the respondents mentioned that information about building or purchasing sanitation and water products shared by concrete ring producer is very good information source. A notable 19.8 percent of the respondents said that it is acceptable / average information shared by concrete ring producer and a very small 2.7 percent of the respondents said it is not good source.

Majority 78.3 percent of the respondents marked that the information about building or purchasing sanitation and water products shared by shop/ seller is acceptable/average information source. A small 8.3 percent of the respondents said it is not good source and 7.7 percent of the respondents said it is very good information source. A very small 5.7 percent of the respondents don't know about the source.

Majority 75.0 percent of the respondents marked that the information shared by the NGO workers about building or purchasing sanitation and water products is very good source. A good 20.0 percent of the respondents said it is acceptable source. A very small 2.7 percent of respondents mentioned it is not good source and 2.3 percent of the respondents don't know about the source.

4.10. WASTE MANAGEMENT:

The rural waste management must rely on a systemic approach involving technical, financial, social, cultural, environmental, and governance aspects. Developing and transition countries must promote smart traditional ways to recycle, reuse, and compost/digest the municipal and agricultural wastes from remote rural regions in order to increase the waste diversion rate from uncontrolled waste disposal practices (open burning, wild dumps, and river/marine dumping).

The domestic waste generated in rural households of India is increasingly becoming an issue of serious concern. Though, solid waste generated in rural areas is predominantly organic and biodegradable, it is becoming a major problem as the waste generated is not segregated in-situ and is of the order of 0.3 to 0.4 million metric tons per day, as reported the Ministry of Drinking Water and Sanitation (MDWS), Government of India. Inconsiderate littering causes poor environmental sanitation resulting in unhealthy quality of living. Therefore, domestic-refuse should be handled responsibly. In order to manage waste in a desirable way, there should be a functional waste management system in place. Without a functional waste collection and disposal system at the Panchayat level it is arbitrary to hold individual households responsible, or blame them of irresponsibility.

With the emerging concern on large quantity of the waste being produced both in the form of solid and liquid waste, the concept of waste management becomes one of the key focus of sustainable development principles which is based on policies and practices. The quantities of solid wastes are increasing and if the wastes are disposed in an uncontrolled manner these may cause adverse impact on public health and environment. Hence these wastes need to be managed efficiently so as to safeguard public health and environment.

In rural areas, compared to urban ones, land availability is not often a constraint. Also, there are more options possible in rural areas for reuse of waste, such as composting of biodegradable material, which can be used in kitchen gardens, agricultural fields, and so on.

Table No. 4.92. Place in which waste thrown of kitchen

Waste thrown	Frequency	Percentage
Dust bin	293	97.7
Throw outside	2	0.7
No response	5	1.7
Total	**300**	**100.0**

The above table no 4.92 explains about place in which waste throw of kitchen house. Out of 300 respondents, largely, 97.7 percent of the respondents kitchen waste being thrown in dust bin. Whereas only least margin of households 0.7 percent of respondents had thrown it outside. A very small 1.7 percent of the respondents had not given response.

It is clear from the above table that majority 97.7 percent of the respondents kitchen waste being thrown in dust bin.

Table No. 4.93. How often the kitchen is cleaned by Respondents

Response	Frequency	Percentage
Daily	275	91.7
Once in a week	20	6.7
No response	5	1.7
Total	**300**	**100.0**

The below presented table no 4.93 specifies that kitchen is being cleaned on everyday among HH. It is observed that before starting the cooking, women clean the kitchen. Above presented table 4.91 specifies that out of 300 respondents, majority 91.7 percent of the respondents clean kitchen daily. A small about 6.7 percent of the respondents clean kitchen once in a week. A very small 1.7 percent of the respondents had not given response.

It is clear from the above table that a majority 91.7 percent of the respondents clean kitchen daily.

Table No. 4.94. Segregation of kitchen waste by the respondents

Segregating the kitchen waste	Response			Total
	Yes	No	Not responded	
Plastic waste	252 (84.0)	43 (14.3)	5 (1.7)	300 (100.0)
Vegetable waste	265 (88.3)	30 (10.0)	5 (1.7)	300 (100.0)
Glass waste	228 (76.0)	67 (22.3)	5 (1.7)	300 (100.0)

The table no 4.94 depicts how household segregate the kitchen waste. The segregation has made in three parts namely plastic waste, vegetable waste and glass waste. Out of 300 respondents, majority 84.0 percent of the respondents segregate kitchen waste as plastic waste and rest 14.3 percent of respondents don't segregate it as plastic waste. A majority 88.3 percent of the respondents segregate kitchen waste as vegetable waste and 10.0 percent of the respondents responded to no. Majority 76.0 percent of the respondents segregate it as glass waste and 22.3 percent of respondents have responded to no. A very small 1.7 percent of the respondents not responded to this question respectively.

It is clear from the above table that majority 84.0 percent of the respondents segregate the kitchen waste as plastic, vegetable and glass waste and a majority 88.3 percent of the respondents segregate kitchen waste as vegetable waste.

Table No. 4.95. Dispatch the waste of kitchen

Disposing of kitchen waste	Frequency	Percentage
Pit	259	86.3
Away from house	26	8.7
Outside the house	15	5.0
Total	**300**	**100.0**

As presented in table no 4.95 explores about where kitchen waste is dispatched by the respondents. Out of the 300 respondents majority 86.3 percent of the households have informed waste is disposed in pit. A small 8.7 percent of the household have informed waste is thrown away from the house and a very small 5.0 percent of the household have said that it thrown outside the home.

It is clear from the above table that majority 86.3 percent of the households have informed waste is disposed in pit.

Table No. 4.96. Disposal of kitchen used solid waste by the respondents

Solid wastes	Frequency	Percentage
Burn	263	87.7
Throw into pit	27	9.0
Recycling	5	1.7
Compost making	5	1.7
Total	300	100.0

Proper disposal of solid and liquid waste ensures the neat and clean surrounding. The table no 4.96 describes that what respondents do the kitchen used solid waste. Out of 300 respondents, majority 87.7 percent of the respondents burn kitchen used solid waste. A small 9.0 percent of the respondents throw into pit. A very small 1.7 percent of the respondents use this solid waste for recycling and compost making respectively.

It is clear from the table that majority 87.7 percent of the respondents burn kitchen used solid waste.

Table No. 4.97. Disposal of kitchen liquid waste by the respondents

Use of liquid waste	Frequency	Percentage
Store in tub	38	12.7
Throw into street	24	8.0
Drinks to cattle	238	79.3
Total	**300**	**100.0**

The above table no 4.97 explains about Disposal of kitchen liquid waste by the respondents. Out of 300 respondents, majority 78.7 percent of the respondents kitchen liquid waste used to feed cattle. A notable percent 12.3 percent respondents store in tub and a small 7.3 percent of the respondent throw into street.

It is clear from the above table that majority 78.7 percent of the respondents kitchen liquid waste used to feed cattle.

Table No. 4.98. Place where bathroom used water discharged

Discharging place	Frequency	Percentage
Flow into street	270	90.0
Flow into soak pit	22	7.3
Flow in to open/closed drainage	8	2.7
Total	**300**	**100.0**

The table no 4.98 describes the where respondents discharge used bathroom water. Out of 300 respondents, a large 90.0 percent of the respondents let the water flow into road. Whereas a small about 7.3 percent of respondents flow used bathroom water into soak pit. A very small 2.7 percent of the respondents flow used bathroom water in to open or closed drainage.

It is clear from the above table that a large 90.0 percent of the respondents let the water flow into road. Hence this shows that households have lack of proper planning of discharge of used bathroom water.

Table No. 4.99. Normal practice of throwing of cattle dung by respondents

Place in which cattle dung is thrown	Frequency	Percentage
Used as manure	195	65.0
Throw into street	72	24.0
Put into bio-gas plant	33	11.0
Total	**300**	**100.0**

The table no 4.99 represents the throwing practice of cattle's dung. Out of 300 respondents, a majority 65.0 percent of respondents said that they use cattle dung as for manure. A good number 24.0 percent of the respondents throw cattle dung in street. A small about 11.0 percent of the respondents said that they used it for bio-gas plant.

It is clear from the above table a majority 65.0 percent of respondents said that they use cattle dung as for manure. Cattle dung is largely used content in agriculture field since it is one of the natural manure to improve soil quality and fertility of the soil.

Table No: 4.100 Availability of biogas by Respondents

Response	Frequency	Percentage
Yes	6	2.0
No	297	97.0
No response	3	1.0
Total	**300**	**100.0**

The above table no 4.100 highlights the availability of biogas in households. Out of 300 respondents, a majority 97.0 percent of the respondents said that they don't have biogas. Only, 2.0 percent of the respondents have biogas in their household. Hence it is clear from the above table that there less importance has given bio-gas plant.

If is clear from the above table that a majority 97.0 percent of the respondents said that they don't have biogas. Ever since the cylinder gas made available to rural areas and there has been significant effort by the Government to provide cylinder gas to BPL families have influenced rural HH to depend on bio-gas system.

4.11. Association between the Variables:

Table No. 4.101. Educational Level and Having own latrine by the respondents

Education	Do you have own latrine		Total
	Yes	No	
None	100	80	180
	55.6%	44.4%	100.0%
Pre-School	9	7	16
	56.2%	43.8%	100.0%
Some Primary	15	7	22
	68.2%	31.8%	100.0%
Finished Primary	18	0	18
	100.0%	0.0%	100.0%
Finished Secondary	25	0	25
	100.0%	0.0%	100.0%
Higher	21	18	39
	53.8%	46.2%	100.0%
Total	**188**	**112**	**300**
	62.7%	**37.3%**	**100.0%**

Chi-square Value: **31.372[a]** DF: **5** Significant Level: **.000** Result: **Significant**

Above table no 4.101 describe the association between educational level and having own latrine by the respondents. Out of 300 respondents, 180 respondents are uneducated, a majority 55.6 percent of the respondents are having own latrine. And a significant 44.4 percent of the respondents don't have latrine.

16 respondents' educational level is pre-schooling. A majority 56.2 percent of the respondents having own latrine. A significant 43.8 percent of the respondents don't have latrine.

22 respondents' educational level is some primary, a majority 68.2 percent of the respondents having own latrine. A significant 31.8 percent of the respondents don't have latrine.

18 respondents' educational level is primary level. All of them are having latrine facility.

25 respondents educational level is secondary level. All of them are having latrine facility.

39 respondents finished higher educational level. A majority 53.8 percent of the respondents having latrine facility. A significant 46.2 percent of the respondents don't have latrine facility.

It is apparent from the above table a majority 62.7 percent of the respondents are having latrine facility. To see the association between the educational level and having own latrine by respondents, a chi-square test was applied. The obtained the p-value was found to be 0.00.Hence, educational level and having own latrine is statistically significant. Hence, this is calls for rejected of null hypothesis.

Table No. 4.102. Educational Level and Functioning of Latrine by the Respondents

Education	If yes, is the latrine functioning now		Total
	Yes	No	
None	82	18	100
	82.0%	18.0%	100.0%
Pre-School	9	0	9
	100.0%	0.0%	100.0%
Some Primary	13	2	15
	86.7%	13.3%	100.0%
Finished Primary	18	0	18
	100.0%	0.0%	100.0%
Finished Secondary	19	6	25
	76.0%	24.0%	100.0%
Higher	10	11	21
	47.6%	52.4%	100.0%
Total	151	37	188
	80.3%	19.7%	100.0%

Chi-square Value: **21.677[a]** DF: **5** Significant Level: **.001** Result: **Significant**

The above table no 2 describe the association beteween educational level and functioning of latrine by the respondents. Out of 188 respondents, 100 respondnets education level is none, among them a majority 82.0 percent of the respondnets latrine is functioning. A small number 18 percent of the respondents latrine was not functioning.

9 respondents educatial level was pre primary. Among them a total percent of the respondents latrine is functioning.

15 respondnets educational level was some primary. A majority 86.7 percent of the respondents latrine is functioning. A small number 13.3 percent of the respondents latrine is not functioning.

18 respondents finished primary schooling. A total percent of the respondents latirne is functioning.

25 respondents finished sceondary schooling. Among them a majority 76 percent of the respondnets latrine is functioning. a small number 24.0 percent of the respondnets latiren is not functioning.

21 respondents fininshed their higher education. Among them a majority 52.4 percent of the respondents latrine was not functioning. A significnat 47.6 percent of the respondnets latrine was functioning.

It is apparent from the above table a majority 80.3 percent of the respondents latrine was functioning. To see the association betwen the educational level and functioning of latrine by the respondents, chi-square test was applied. The p-value was found to be 0.001 hence, the educational level and functioning of latrine by the respondents is statisctically significant. Hence, this is calls for the rejected of null hypothesis.

Table No. 4.103. Occupation and Kind of Latrine having by the Respondents

Occupation	What kind of latrine do you have					Total
	Piped sewer system	Septic tanks	Pit latrine	Ventilated improved pit latrine	Pit latrine with slab	
Professional/ Technical	0	4	4	0	3	11
	0.0%	36.4%	36.4%	0.0%	27.3%	100.0%
Day Labour	0	4	11	2	8	25
	0.0%	16.0%	44.0%	8.0%	32.0%	100.0%
Civil Service	0	4	4	0	0	8
	0.0%	50.0%	50.0%	0.0%	0.0%	100.0%
Service/Sales/Commercial	0	0	4	0	0	4
	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Agricultural	8	2	30	3	93	136
	5.9%	1.5%	22.1%	2.2%	68.4%	100.0%
Other (specify)	0	0	4	0	0	4
	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Total	**8**	**14**	**57**	**5**	**104**	**188**
	4.3%	**7.4%**	**30.3%**	**2.7%**	**55.3%**	**100.0%**

Chi-square Value: **83.580[a]** DF: **20** Significant Level: **.000** Result: **Significant**

The above table no 4.104 describe the association between the occupation and kind of latrine having by the respondents. Out of 188 respondents, 11 respondents are professional/ technical workers, among them a significant 36.4 percent of the respondents having septic tanks and pit latrine. A good number 27.3 percent of the respondents having pit latrine with slab.

25 respondents are day labour, among them a significant 44 percent of the respondents are having pit latrine. A good number 32 percent of the respondents are having pit latrine with slab. A small number 16 percent of the respondents are having septic tanks. Whereas, only 8 percent of the respondents are having ventilated improved pit latrine.

8 respondents are civil service, among them half percent (50%)of the respondents are having pit laterine and septic tanks.

4 respondents are service/sales/ commircial workers a total percent of the respondents having pit latrine.

136 respondents are doing agriculture, among them a majority 68.4 percent of the respondents having pit latrine with slab. A good number 22.1 percent of the respondents having pit latrine. A small number 5.9 percent of the respondents having piped sewer system. Whereas , only 2.2 percent and 1.5 percent of the respondents having ventilated improved pit latrine and septic tanks.

4 percent of the respondents are other professional workers, a total percent of the respondents having pit latrine.

It is apparent from the above table a majority 55.3 percent of the respondents having pit latrine with slab. To see the association between occupation and kind of latrine having by the respondents, a chi-square test was applied. The p-value was found to be 0.00 hence, the association between occupation and kind of latrine having bythe respondents is statastically significant. Hence this is calls for the null hypothesis is rejected.

Table No. 4.104. Gender of the respondents and Final Decision Taken to Build Latrine by Respondents Family

Gender	who made the final decision to build your first latrine			Total
	Head of the household	Head of household & Spouse jointly	Family together	
Male	126	13	13	152
	82.9%	8.6%	8.6%	100.0%
Female	26	10	0	36
	72.2%	27.8%	0.0%	100.0%
Total	**152**	**23**	**13**	**188**
	80.9%	**12.2%**	**6.9%**	**100.0%**

Chi-square Value: **12.282[a]** DF: **2** Significant Level: **.020** Result: **Significant**

The above table no 4.104 describe the association between gender of the respondents and final decision taken to build latrine by respondents. out of 188 respondents, 152 respondents are male among them a majority 82.9 percent of the respondents said that head of the household has taken final decision. Whereas, only 8.6 percent of respondents said that head of household and spouse jointly taken final decision and family together taken final decision.

36 respondents are females. Among them a majority 72.2 percent of the respondents said that head of the household has taken final decision about build latrine. A significant 27.8 percent of the respondents said that head of household and spouse jointly taken final decision about build latrine.

It is apparent from the above table 80.9 percent of the respondents said that head of the household has taken final decision about build latrine.To see the association between occupation and kind of latrine having by the respondents, a chi-square test was applied. The p-value was found to be 0.020.Hence, the association between Gebder and Final Decision Taken to Build Latrine is statastically significant. Hence this is calls for the null hypothesis is rejected.

Table No. 4.105. Education and adults using latrine for defecation in dry season

Education	Do adults n your household use the latrine for defecation in dry season				Total
	Always	Sometime	Never	Not Applicable	
None	53	30	31	66	180
	29.4%	16.7%	17.2%	36.7%	100.0%
Pre-School	6	3	2	5	16
	37.5%	18.8%	12.5%	31.2%	100.0%
Some Primary	5	4	4	9	22
	22.7%	18.2%	18.2%	40.9%	100.0%
Finished Primary	9	5	4	0	18
	50.0%	27.8%	22.2%	0.0%	100.0%
Finished Secondary	6	4	7	8	25
	24.0%	16.0%	28.0%	32.0%	100.0%
Higher	5	2	8	24	39
	12.8%	5.1%	20.5%	61.5%	100.0%
Total	**84**	**48**	**56**	**112**	**300**
	28.0%	**16.0%**	**18.7%**	**37.3%**	**100.0%**

Chi-square Value: **27.141[a]** DF: **15** Significant Level: **.028** Result: **Significant**

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The above table no 4.105 describe the association between education and adults using latrine for defecation in dry season. Out of 300 respondents. 180 respondents are uneducated, among them a significant 36.7 percent of the respondents not applicable. A good number 29.4 percent of the respondents said that they always using latrine for defecation in dry season. A small number 17.2 percent of the respondents said that they never using latrine for defecation in dry season. Whereas, only 16.7 percent of the respondents said that they sometime using latrine for defecation in dry season.

16 respondents education is pre-school, among them a significant 37.5 percent of the respondents said that they always using latrine for defecation in dry season. 31.2 percent of the respondents are not applicable. A good number 18.8 percent of the respondents said that they sometime using latrine for defecation in dry season. 12.5 percent of the respondents said that they never using latrine for defecation in dry season.

22 respondents some primary education, a significant number 40.9 percent of the respondents are not applicable. a good number 22.7 percent of the respondents said that they always using latrine for defecation in dry season. Whereas, only 18.2 percent of the respondents said that they sometime using and never use latrine for defecation in dry season.

18 respondents finished primary school, a majority 50 percent of the respondents always using latrine for defecation in dry season. A good number 27.8 percent of the respondents using sometime latrine for defecation in dry season. Whereas only 22.2 percent of the respondents never using latrine for defecation in dry season.

25 respondents finished secondary schooling, among them a significant 32 percent of the respondents are not applicable. A good number 28.0 percent of the respondents never using latrine for defecation in dry season. A good number 24.0 percent of the respondents always using latrine for defecation in dry. Whereas, only 16.0 percent of the respondents sometime using latrine for defecation in dry season.

39 respondents completed their higher education, among them a majority 61.5 percent of the respondents are not applicable. A good number 20.5 percent of the respondents never using latrine for defecation in dry season. A small number 12.8

percent of the respondents always using latrine for defecation in dry season. whereas, only 5.1 percent of the respondents sometime using latrine for defecation in dry season.

It is apparent from the above table a significant 37.3 percent of the respondents are not applicable for this. To see the association between education and adults using latrine for defecation in dry season, chi-square test was applied, the p-value was found to be 0.028 hence, education and adults using latrine for defecation in dry season is statistically significant. Hence this is calls for rejected of null hypothesis.

Table No. 4.106.Education and Adults Using Latrine for Defecation in Rainy Season

Education	Do adults n your household use the latrine for defecation in rainy season				Total
	Always	Sometime	Never	Not Applicable	
None	86	11	13	70	180
	47.8%	6.1%	7.2%	38.9%	100.0%
Pre-School	9	0	0	7	16
	56.2%	0.0%	0.0%	43.8%	100.0%
Some Primary	11	2	0	9	22
	50.0%	9.1%	0.0%	40.9%	100.0%
Finished Primary	17	1	0	0	18
	94.4%	5.6%	0.0%	0.0%	100.0%
Finished Secondary	16	2	3	4	25
	64.0%	8.0%	12.0%	16.0%	100.0%
Higher	13	2	2	22	39
	33.3%	5.1%	5.1%	56.4%	100.0%
Total	**152**	**18**	**18**	**112**	**300**
	50.7%	**6.0%**	**6.0%**	**37.3%**	**100.0%**

Chi-square Value: **45.9980[a]** DF: **15** Significant Level: **.028** Result: **Significant**

The above table no 4.106 describe the association between education and adults using latrine for defecation in rainy season. Out of 300 respondents, 180 respondents are uneducated, among them a significant 47.8 percent of the respondents always using latrine for defecation in rainy season. A good number 38.9 percent of the respondents are not applicable. a small number 7.2 percent of the respondents are never using latrine in rainy season. Whereas, only 6.1 percent of the respondents are sometimes using latrine in rainy season.

16 respondents are completed pre-schooling, among them a majority 56.2 percent of the respondents always using latrine for defecation in rainy season. a significant 43.8 percent of the respondents are not applicable.

22 respondents are completed their some primary school, among them a majority 50 percent of the respondents are always using latrine for defecation in rainy season. a significant 40.9 percent of the respondents are not applicable. Whereas, only 9.1 percent of the respondents are sometime using latrine for defecation in rainy season.

18 respondents are finished primary schooling, among them 94.4 percent of the respondents always using latrine for defecation in rainy season also. Whereas, only 5.6 percent of the respondents are sometime using latrine for defecation in rainy season.

25 respondents are finished secondary schooling, among them a majority 64 percent of the respondents always using latrine for defecation in rainy season. a good number 16 percent of the respondents are not applicable. a small number 12 percent of the respondents are never using latrine for defecation in rainy season. Whereas, only 8 percent of the respondents are using sometime latrine for defecation in rainy season.

39 respondents are finished their higher education, among them a majority 56.4 percent of the respondents are not applicable. a significant 33.3 percent of the respondents are always using latrine for defecation in rainy season. Whereas, only 5.1 percent of the respondents are sometime using latrine for defecation rainy season and some other adults are never using latrine for defecation in rainy season.

It is apparent from the above table a majority 50.7 percent of the respondents are always using latrine for defecation in rainy season. To see the association between education and adults using latrine for defecation in rainy season, chi-square test was applied. The p-value was found to be 0.028 hence, education and adults using latrine for defecation in rainy season is statistically significant. Hence this is calls for rejection of null hypothesis.

Table No. 4.107. Gender and preferred Place of Latrine When Latrine is not Available in house

Gender	If you don't have this latrine to use, where would you go to defecate				Total
	Public latrine	Neighbours Latrine	Field/forest	Others specify	
Male	12	2	28	87	129
	9.3%	1.6%	21.7%	67.4%	100.0%
Female	8	3	8	11	30
	26.7%	10.0%	26.7%	36.7%	100.0%
Total	**20**	**5**	**36**	**98**	**159**
	12.6%	**3.1%**	**22.6%**	**61.6%**	**100.0%**

Chi-square Value: **15.365[a]** DF: **3** Significant Level: **.002** Result: **Significant**

The above table no 4.108 describe the association between gender and preferred place of latrine when latrine is not available in house. Out of 159 respondents, 129 respondents are male, among them majority 67.4 percent of the respondents are preferred another place when they don't have latrine in those houses. A good number 21.7 percent of the respondents are going filed/ forest for latrine. A small number 9.3 percent of the respondents are using public latrine when they don't have latrine in house. Whereas, only 1.6 percent of the respondents are using neighbour's latrine.

30 respondents are females, among them a significant 36.7 percent of the respondents using other place when they don't have latrine in their house. A good number 26.7 percent of the respondents are using filed / forest and others are using public latrine when they don't have latrine in their house. Only 10 percent of the respondents are using neighbour's latrine.

It is apparent from the above table a majority 61.6 percent of the respondents are preferred another place when they don't have latrine in those houses. To see the association between gender and preferred place of latrine when latrine is not available in house, chi-square test was applied. The p-value was found to be 0.002, hence gender and preferred place of latrine when latrine is not available in house is statistically significant. Hence, this is calls for rejected of null hypothesis.

CHAPTER – 5

FINDINGS, RECOMMENDATION & SUGGESTION

5.1. Introduction

5.2. Major Findings

5.2.1. Geographical Background of The Respondent

5.2.2. Socio-Economic Aspects

5.2.3. Latrine Knowledge and Perceptions

5.2.4. Latrine Owners

5.2.5. Non-Latrine Owners

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5.2.7. Hygienic

5.2.8. Communication

5.2.9. Waste Management

5.2.10 Association Between the Variables

5.3. Observations And Recommendation

5.1. INTRODUCTION

It has been already described that, the children and infants are affected in particular and all people in general due to open defecation. Open defecation creates environmental pollution. It is also shameful for women and even leads to sexual exploitation and harassment to women. The Government of India and Government of Karnataka is much conscious about public health. Realizing the demerits of open defecation, Total Sanitation Campaign was launched. It was renamed as Nirmal Bharat Abhiyan and now it is known as Swachcha Bharat Mission.

Though the primary aim of this campaign was just constructing latrines and toilets at rural areas, it was widened and includes cleaning campaign at rural and urban areas. Construction of latrines and toilets are now part of this programme. Under NBA or SBA, financial assistance is provided to each family to construct latrines and toilets at their households. It has been successful all over India as disclosed by national level statistics. Still, these schemes are also not away from controversies. It is noted that though latrines and toilets are constructed under this programme, still open defecation is not stopped by people especially in villages.

Government of India's flagship program, the Total Sanitation Campaign, in vogue since 1999, is now rechristened Nirmal Bharat Abhiyan. It is a demand driven and people-centred sanitation program. It evolved from the limited achievements of the first structured programme for rural sanitation in India, the Central Rural Sanitation Programme, which had minimal community participation. The main goal of the TSC is to eradicate the practice of open defecation by accelerating sanitation coverage in rural areas. This objective is to be met through provision of adequate toilet facilities, both at the individual and community level as well as generating awareness of the ills of open defecation for improved health, income and quality of life.

One of the main causes for this failure was found to be the "total lack of community participation in this outmoded supply-driven, subsidy-oriented government programme. There was poor utilisation of whatever toilets were constructed under the programme, which was due to many reasons, e.g. lack of awareness, poor construction standards, emphasis on high-cost designs, absence of participation of beneficiaries, etc. Most of the states could not provide adequate priority to the sanitation programme. The CRSP had also neglected school sanitation, which is considered as one of the vital

components of sanitation. CRSP also failed to have linkages with various local institutions

In this respect, it is essential to look into the attitudes of people towards health of family cleanliness at private and public places, awareness of people on cleanliness campaigns such as NBA and SBA, benefits gained from these schemes, etc. The present study is based on collection of primary data from the beneficiaries of TSC, NBA or SBM and analysis and discussion of collected primary data is already made. Totally 300 persons living in rural areas of Vijayapura district was surveyed covering 20 villages which have been awarded as Nirmala Grama Villages or ODF villages. The summaries of findings from the present study are as under

5.2. MAJOR FINDINGS

Following are the summaries of findings from the present study:

5.2.1. GEOGRAPHICAL BACKGROUND OF THE RESPONDENT:

1. Out of 300 respondents, a majority 84 % of the respondents are males.
2. 86.7% of the respondents' family is headed by male member.
3. 74.60% of male members are depended on agriculture and 40.90% of female members of the household are also depended on agriculture.
4. 60.00% of the respondents have not gone to school/ found to be illiterates.

5.2.2. SOCIO-ECONOMIC ASPECTS:

1. Out of 300 respondents, a majority 62.00% of the households are having own agriculture land.
2. 46.20% of the respondents have more than 6 acres of agriculture land which actually depicts the economic well-being of the households.
3. 56.0% of the houses constructed having shelter wall to living floor in concrete and brick which perhaps the houses are likely in better off condition.
4. 55.70% of the respondents houses are having concrete roof.
5. 82.0% of the households/ head of the households have mobile phones.
6. 35.00% of the respondents main source of income is agriculture.
7. 69.00% of the households have opined saving is done regularly on every week.

8. 32.70 % of the households have availed micro finance from various sources available whereas 67.30% have informed that thy never taken micro finance loan.
9. 21.00% of the respondents has taken lone to purchase seeds/ fertilizers.

5.2.3. LATRINE KNOWLEDGE AND PERCEPTIONS:

1. Majority 51.70% of the respondents are using household latrine.
2. About 41.00% of responded that distance to defecate place is 10 Meters.
3. 47.7 % of them respondents are unsatisfied with their defecate place.
4. 45.30% of the respondents children use household toilets for defecate.
5. 22.7% of the respondents dispose the baby's faeces into latrine.
6. Majority 66.00% of the respondents have pit latrine with slab.
7. 32.9% of the respondents who actually got the information from village chief about latrines.
8. Majority 97.3% of the respondents have flush/ pour type latrine.
9. Majority 87.7% of the respondents know who can build Flush/pour flush.
10. Majority 50.3% of respondents have said that there is cost to maintain latrine which they cannot afford to do so.
11. 41.0% of the respondents Improved hygiene/health/cleanliness.
12. Nearly half 50.7% of the respondents said that amount required to have a latrine is Rs. 15000.00.
13. Majority 99.0% of HH respondents feels that spending money to have good latrine is very important to keep up the health condition of the family safe and secured.

5.2.4. LATRINE OWNERS:

1. Majority 62.70% of the respondents owned toilet.
2. Majority 76.06% of the respondents have functional toilet.
3. More than half 55.55% of the respondents are not using latrine because there is No water to flush.
4. Majority 78.4 percent of the respondents informed that programme was offering subsidy.

5. 44.6% of the adult respondents use latrine always in dry season and majority 80.8% of the respondents use latrine always in rainy season.
6. 46.4% of the respondents said that children never use latrine in dry season when it is compared to rainy season it is decreased to 35.2%.
7. Majority 55.3% of the households' latrines is built with pit latrine with slab.
8. Majority 82.9% of the respondents' latrine ground structure is lined pit offset.
9. A majority 85.3% of the respondents slab of the latrine is constructed with concrete slab.
10. Majority 81.3% of the respondents have said that latrine wall is constructed concrete/brick.
11. Majority 78.3% of the respondent roof of the latrine constructed with concrete.
12. Majority 87.6% of the respondents didn't construct with attached bathing facility.
13. Majority 79.1% of the respondents used to flush latrine after defecation.
14. Majority 65.4% of the respondents said that more than 25 litres water is needed per day.
15. Majority 82.5% of the respondents said they have sufficient water to flush the latrine in dry season.
16. A very good number 27.6% of the respondents have improved roof.
17. Half 50.6% of the respondents constructed their latrine in the year 2015.
18. Majority 80.8% of the respondents said that head of the family is the person who had taken final decision in built first latrine.
19. Majority 78.7% of the respondents constructed latrine because programme offering subsidy.
20. Majority 82.3% of the respondents have confirmed that they have received assistance as subsidy, materials, labour and technical advice.
21. Majority 77.6% of the respondents' subsidized assistance received from the organization.
22. Majority 96.7% of the respondents constructed latrine at one time.
23. Majority 94.2% of the respondents specifies that 3-4 weeks has taken to construct latrine.
24. A majority 85.6% of the respondents have plans in making improvement in latrine.
25. Majority 80.2% of the respondents had not emptied the pit ever.

26. Majority 96.3% of the respondents didn't hired respondents to empty pit.
27. Majority 93.1% of the respondents said that they have purchased materials from their own village.
28. Majority 75.6% of the respondents said that they arranged both hired and household person to purchase the materials for construction.

5.2.5. NON-LATRINE OWNERS:

1. Majority 83.9% of the respondents had discussion about building latrine in last 1 to 6 months ago.
2. Majority 57.5% of the respondents said that husband and wife together discuss about building latrine.
3. 56.0% of the respondents said that husband and wife together discuss about building latrine.
4. Majority 79.7% of the respondents had identified mason to build latrine.
5. Majority 75.9% of the respondents have identified from village itself.
6. Majority 91.3% of the respondents had hired a mason because he has good reputation.
7. Majority 83.7% of the respondents said they will purchase from their own village.
8. Majority 94.9% of the respondents said that they have site to build latrine.
9. Majority 80.9 of the respondents opined that they require Rs. 20,000 to build latrine.
10. Majority 96.6% of the non-latrine owners were not saved money build latrine.
11. Majority 89.3% of the respondents don't have any concern about taking lone from micro-finance.

5.2.6. SOURCE OF WATER:

1. A majority 53.67% of the respondents opined that they collect drinking water from public tap/standpipe among.
2. A vast majority 93.2% of households collect water from the main source available at onsite among.

3. A good number 39.7% of the households paid Rs.3 towards drinking water bill for the usage.
4. Majority 79.0% of the respondents are depended on public taps.
5. Majority 53.3% of the respondents said that drinking water is available at on site.
6. A very good number 38.4% of the respondents water usage in kilolitre is 30.00 (KL).
7. Nearly half 49.3% of the respondents pay Rs. 3.00 for drinking water for the secondary source.
8. Majority 77.3% of the respondents mentioned that long waiting time to collect drinking water is the reason they are disliking the drinking water.
9. Majority 78.47% of the respondents is opined that Long waiting time to collect drinking water.
10. Very small 6.0%; 12.3%; 13.0%; 2.3%; 9.7% and 1.7% of the respondents like main drinking water source in dry season because it doesn't take long time, to maintain personal safety, have convenient, water is not having smell, water is clean and it is good for visitors.
11. Majority 78.0% of the respondents are satisfied on quality of drinking water available.
12. A majority of 76.7% of the respondents are satisfied on quality of drinking water available.
13. A majority 57.7% of the respondents said that adult women collect water.
14. Majority 95.7% of the households who responded that they treat safe water before use.
15. Majority 84.7% respondents treat water safe before use because it improves good health condition.
16. Majority 94.7% of the respondents boil the water before use.
17. A majority about 82.0% of the respondents treat water every time before used for drinking.

5.2.7. HYGIENE:

1. Majority 84.0% of the respondents wash their hands with more than three times in a day.
2. Majority 95.7% of the respondents wash their hands to remove dirty.

3. A small 17.3% of the respondents wash their hands to look good.
4. Majority 97.0% of the respondents don't wash their hands to make the smell good.
5. Majority 65.7% of the respondents don't wash their hands to prevent diseases.
6. Majority 83.7% of the respondents don't wash their hands with soap.
7. Majority 61.3% of the respondents don't wash their hands with soap when they return to home.
8. Majority 86.7% of the respondents wash their hands with soap before eating.
9. Majority 94.3% of the respondents don't wash their hands with soap after eating.
10. Majority 94.3% of the respondents don't wash their hands with soap before going to sleep.
11. A majority 81.0% of the respondents wash their hands with soap before preparing food.
12. A majority 98.3%, 97.7% and 94.3% of the respondents don't wash their hands with soap after walking up, before washing baby and after washing baby.
13. Majority 74.7% of the respondents wash their hands at water source.
14. Majority 65.3% of the respondents don't know what preventive measures need to be taken to prevent children from diarrhoea.

5.2.8. COMMUNICATION:

1. Majority 54.3% of respondents' one household have community group membership.
2. Majority 84.7% of the respondents said that the information about building or purchasing sanitation and water products shared by mason is acceptable/ average information source.
3. Majority 77.7% of the respondents mentioned that information about building or purchasing sanitation and water products shared by concrete ring producer is very good information source.
4. Majority 78.3% of the respondents marked that the information about building or purchasing sanitation and water products shared by shop/ seller is acceptable/average information source.

5. Majority 75.0% of the respondents marked that the information shared by the NGO workers about building or purchasing sanitation and water products is very good source.

5.2.9. WASTE MANAGEMENT:

1. A majority 97.7% of the respondents' kitchen waste being thrown in dust bin.
2. Majority 91.7% of the respondents clean kitchen daily.
3. Majority 84.0% of the respondents segregate kitchen waste as plastic waste.
4. Majority 85% of the households have informed waste is disposed in pit.
5. Majority 87.7% of the respondents' burn kitchen used solid waste.
6. 78.7% of the respondents' kitchen liquid waste used to feed cattle.
7. 90.0% of the respondents let the water flow into road.
8. Majority 65.0% of HH is found using it as manure.
9. Majority 97.0% of the respondents said that they don't have biogas. Only, 2.0 % of the respondents have biogas in their household.

5.2.9. Association between the variables:

1. To see the association between educational qualifications and status of own latrine chi-square test has been applied. The obtained p-value was found to be 0.001.Hence, the association between educational qualification and status of own latrine is statistically significant. Hence, this is calls for the rejected of null hypothesis.
2. To see the association between educational qualifications and functioning of the latrine chi-square test has been applied. The obtained p-value was found to be 0.001. Hence, the association between educational qualifications and functioning of the latrine is statistically significant. Hence, this is calls for the rejected of null hypothesis.
3. To see the association between Occupation of the HH and kind of latrine household chi-square test has been applied. The obtained p-value was found to be 0.001. Hence, the association between Occupation of the HH and kind of latrine household is statistically significant. Hence, this is calls for the rejected of null hypothesis.

4. To see the association between gender and the final decision to build latrine chi-square test has been applied. The obtained p-value was found to be 0.020. Hence, the association between gender and the final decision to build latrine is statistically significant. Hence, this is calls for the rejected of null hypothesis.
5. To see the association between Education and adults using latrine for defecation in dry season chi-square test has been applied. The obtained p-value was found to be 0.001. Hence, the association between Education and adults using latrine for defecation in dry season is statistically significant. Hence, this is calls for the rejected of null hypothesis.
6. To see the association between Education and adults using latrine for defecation in rainy season chi-square test has been applied. The obtained p-value was found to be 0.001. Hence, the association between Education and adults using latrine for defecation in rainy season is statistically significant. Hence, this is calls for the rejected of null hypothesis.
7. To see the association between Gender and choice of respondents to go to defecate having no latrine chi-square test has been applied. The obtained p-value was found to be 0.060. Hence, the association between Gender and choice of respondents to go to defecate having no latrine is statistically not significant. Hence, this is calls for the acceptance of the null hypothesis.

5.3. OBSERVATIONS AND RECOMMENDATION

It is noted that attitudes of people on cleanliness including use of toilets and latrines and open defecation varies according to age and education. Hence, age and education was considered while collecting the primary data. As such, more or less equal proportions of different age groups of the respondents were selected to collect the primary data. It is found that majority of the respondents surveyed are illiterates or low-educated that is up to secondary education.

1. The government claim of constructing 100% latrine is put researchers into apparent situation to examine the effective usage of the latrine. Having constructed latrine or just owning does not bring transformation in mind-set of the household but it should ensure that latrines are used towards creating healthy environment.

2. The current awareness campaigns have not let to a change in the mindset of the households to give high priority to latrine construction and to that of use it effective and optimistically.
3. Report strongly finds that the non-interest of the household to use latrine for defecate as they are so convenient with open defecation. Surprisingly the head of the family did not even consider the safety and modesty of the female since they too were forced for open defecation. This approach need to be changes with Behavioural Communication Change (BCC) model to convince and to make the HH to use latrine regularly.
4. Defecation outside is a common practice among most rural adult men. Being farmers, they need to visit their crop fields early in the morning. They generally men do not go for OD in groups as women and girls do.
5. Community contribution did not take place at the expected level due to lack of efficiency in the implementation process.
6. Past experiences suggest that involvement of bureaucracy and politicians in the toilet construction programme is minimized. As space or land is a major constraint in the construction of household latrines, community sanitary complexes need to be promoted based where there lack of space for construction of toilets.
7. It is observed that the Rural Sanitary Mart (RSM) programme involving the replacement of subsidized programme by privatized on resulted in higher coverage of sanitation in rural area.
8. To achieve a certain minimum level of sanitation at the household level a multipronged and sustained programme is needed. The study also highlights the role of education, leadership, finances and social mobilization as important factors in promoting sanitation practices by the households.
9. The claim and announcement of government as Nirmal Grama Villages which specifies that villages with Open Defecation Free (ODF) draws an intensive attention to examine and check, the effectiveness and efficient implementation of Sanitation programs in rural villages of Karnataka.
10. Re-thinking and re-evaluating of announcement of ODF or Nirmal Grama programs as there is dominant persistence of the Open Defecation in the villages in which researcher undertaken under this study.

11. The behavioral mind-set of people still not been changed and they found evenly more comfortable in preferring open defecation, this suggests the lack of awareness and consciousness about effect of Open defecation not only to the health of children and people residing in the villages but also largely to environment, hence researcher strongly feels and recommends sensitization and awareness building program to change mind-set of people.
12. The study found that a majority of women who still prefer OD even though they have their own IHHL. Hence mind-set of women need to be changed as women in the family are the one who change maker in the family are supposed to main teacher and protector to keep the health intact. Women practicing OD in way influences the rest of the family hence this attitude has to be changed and women are to be convinced to use latrine.
13. Systematic efforts to sensitize school children and parents about importance of personal hygiene, improvement in parental literacy coupled with economic empowerment of rural families can help to enhance the status of personal hygiene of students and thereby drastic reduction in their disease burden.
14. Though, all the respondents have gained benefits from Total Sanitation Campaign (TSC), Nirmal Bharat Abhiyan (NBA) or Swachh Bharat Abhiyan (SBA), still many of the respondents are habituated to go for open defecation. It shows that failure in these schemes to increase awareness of people in rural areas against open defecation and consequent health problems. Still, few of the respondents are visiting to community toilets for defecation.
15. It is observed from the present study that, majority of the respondents have realized the significance of Anganawadi in maintaining health, hygiene and nutrition of infants and children. As such, they are sending their children and infants to Anganawadi. As stated by majority of the respondents, the schools and Anganawadi have toilets and latrines. But, to a greater extent, the toilets and latrines attached to schools and Anganawadi are not clean, not used and locked. Still few of the schools and Anganawadi don’t have toilets and latrines.

16. Almost villages surveyed don't have community sanitary complexes and few of the villages have community sanitary complexes. Wherever there are community sanitary complexes, the Panchayats are maintaining such community sanitary complexes. Though all the Gram Panchayat offices have toilets and latrines, they are not clean, not used or kept locked. Hence it important that regular cleaning of toilets and latrines regularly is essential for every family to avoid health problems. A few of the villages have also got different awards such as Suvarna Grama and Nirmal Gram Puraskar.
17. To conclude, the study revealed that the TSC, NBA and SBA have provided benefits to common people to construct family and community latrines and toilets. Still, many of the people in villages are not aware about the prime purposes of construction of latrines and toilets. Even many of the people are habituated to go for open defecation. Hence, the ultimate aim of these schemes has been failed to some extent. It has also disclosed that, due to absence of drainages and poor sanitation in villages, cleanliness is not maintained, which invites health problems and diseases.
18. It is essential on the part of Panchayats to take action to clean roads, drainages and public dust bins regularly that is at least once in two days. It helps to maintain public health in the villages.
19. Undertaking extensive and intensive mass awareness by Government and the NGOs to against open defecation and demerits of open defecation among the people in villages is essentially important. Collective and community driven approach need to strong and has to have systematic strategic plan of action ensure that village are 100 ODF.
20. The Government has to pass necessary legislations and put conditions that clean latrines and toilets should be constructed besides the schools and Anganawadi and proper maintenance of toilets need to be done regularly.

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Vijayapur

Department of Social Work

"The Impact Study on Total Sanitation Campaign in Vijayapur District"

INTERVIEW SCHEDULE

I. Respondent Information:

1.	Name:	……
2.	What is your relationship to the head of the household?	1. Self 2. Spouse 3. Son/Daughter 4. Other 5. Specify
3.	Sex	1. Male 2. Female
4.	Sex of the household head?	1. Male 2. Female
5.	Occupation of the head of the household?	1. Professional /Technical 2. Factory Worker 3. Day Labor 4. Civil Service 5. Service/ Sales/Commercial 6. Agricultural 7. Student 8. Other Specify----------
6	How many people usually live in this house?	1. Male ---------- people 2. Female ---------- people
7	Education?	1. None 2. Pre- school 3. Some Primary 4. Finished Primary 5. Some Secondary 6. Finished Secondary 7. Higher

II. Socio Economic Aspects:

8	Does your household own agriculture land?	1. Yes 2. No 3. Work other's land
9	If yes, how much agricultural land are you able to cultivate?	…….acres (100 = 1 hectares)
10	Last year, what was the major crop yield	
11	What kind of shelter walls, does your house have on the main living floor? (If No.)	1. Concrete/brick 2. Fibrous cement 3. Galvanized steel 4. Wood 5. Palm/Bamboo/Thatch 6. Bamboo/Straw with mud 7. Stone with mud/cement 8. Salvaged material 9. No Wall 10. Other Specify ……..
12	What kind of roof does your house have?	1. Concrete 2. Fibrous cement 3. Galvanized steel 4. Wood 5. Tiles 6. Palm/Bamboo/Thatch 7. Plastic sheet 8. Salvaged material 9. No roof 10. Other Specify …….
13	Which of the following does your household own?	1. Motorbike 2. Bicycle 3. Television 4. Radio 5. Mobile phone 6. Cow (s) buffalo 7. Pigs 8. Bullock cart 9. Semi-tractor 10. Generator 11. Battery 12. Electric pump for irrigation 13. Rain water tank of sealed concrete 14. Rings/ jumbo jar 15. Other Specify ……..
14	What were the main source of your cash income of all your family members in the last 12 month?	1. Selling crops 2. Selling animal product 3. Fishing 4. Farm labor 5. Business/trading 6. Salary

		7. Gift from others 8. Other Specify …….
15	In what months do you have the highest income?	1. January 2. February 3. March 4. April 5. May 6. June 7. July 8. August 8. September 9. October 10. November 11. December 12. All months same income 13. Don't know
16	In the household how often is money put aside for savings?	1. Each week 2. Each months 3. 2-3 times per year 4. Once per year 5. Rarely 6. Never
17	Have you ever had microfinance loan?	1. Yes 2. No
18	If yes, when was your most recent loan?	1. Less than 6 months ago 2. 6 month – 1 year ago 3. More than 1 year ago
19	What is/was the loan used for?	Specify ……
20	How much is/was the loan?	…… Rs

III. Latrine Knowledge and Perceptions

21	Where do adults in your household usually go to defecate?	1. Household latrine 2. Other latrine (Public Toilets) 3. Open defecation -near house 4. Open defecation- field/forest 5. Other specify ……..
22	How many meters is this place from your house?	…… meters
23	How satisfied are you with your current defection place?	1. Very satisfied 2. Satisfied 3. Unsatisfied 4. Very unsatisfied 5. Don/t know
24	Where do children in your household usually go to defecate?	1. Household larine 2. Other latrine 3. Open defecation- near house 4. Open defecation- field/forest 5. No children 6. Others _____
25	In your household, how baby's feces is usually disposed off?	1. Put into latrine 2. Put into drain/ditch

		3. Thrown in garbage 4. Buried 5. Left it open 6. Having No baby 7. Other Specify ……..
26	What types of latrines do you know about?	1. Flush/pour-flush 2. Ventilated improved pit (VIP) latrine 3. Pit latrine with slab 4. Composting toilet 5. None 6. Other Specify …….
27	Which of these types of latrines have you learned about for the first time in the past year?	1. Flush/pour-flush 2. Ventilated improved pit (VIP) latrine 3. Pit latrine with slab 4. Composting toilet 5. None 6. Other Specify …….
28	Where/ how do you learn about latrines?	1. Community meeting 2. Village chief 3. Neighbors 4. Relative 5. Mason 6. Radio 7. Poster/picture 8. Bill board advertisement 9. Television advertisement 10. NGO/agency worker 11. Government representative 12. Other Specify …….
29	What kind of latrine would you most prefer for your household?	1. Flush /pour-flush 2. Dry pit latrine 3. Other Specify ……..
30	What particular features do you like the most about your preferred latrine?	1. Looks good/comfortable 2. No Smell 3. No flies 4. Don’t see feces 5. Easy to clean 6. Don’t need water o flush 7. Less expensive 8. Other Specify ……
31	Do you know anyone who can build this type of latrine?	1. Yes 2. No 3. Don’t know
32	What are the disadvantages of owning a latrine?	1. Bad smell 2. Attracts flies 3. Cost to maintain it 4. Work to maintain it 5. Other people come to use it

		6. Affects groundwater quality 7. Overflows 8. No disadvantages 9. Don't know 10. Other Specify……
33	What are the advantages of owning a latrine?	1. Improved hygiene/health/cleanliness 2. More privacy 3. More comfortable 4. Convenience/save time 5. Improved safety 6. Improved status/prestige 7. Guests can use it 8. No advantage 9. Don't know 10. Other Specify ……..
34	How much would you expect to pay for these latrines?	1. Latrine type A ---------- R 2. Latrine type B ---------- R 3. Latrine type C---------- R 4. Latrine type D---------- R
35	How important is spending money for a good latrine to your family's health?	1. Very important 2. Quite important 3. No so important 4. Not important at all 5. Don't know

IV. Latrine Owners:

36	Do you have your own latrine?	1. Yes 2. No
37	If yes, is the latrine functioning now?	1. Yes 2. No
38	If no, why not?	1. Dirty 2. Full 3. No water to flush 4. Slab broken 5. Superstructure broken/missing 6. Not finished building 7. Used as storage 8. Smell bad 9. Prefer the field/forest Other Specify…….
39	If no, why did you build this latrine in the first place. (Next go to non latrine)	1. Programme was offering subsidy 2. Someone told me I had to 3. Had enough money to buy 4. Sick/old relative 5. Construction of new house 6. Event (wedding)/funeral new year 7. Neighbor got one 8. Had visitors from outside village

		coming 9. Don't know 10. Other Specify…….	
40	Do adults in your household use the latrine for defecation?	41. **Dry season** 1. Always 2. Sometimes 3. Never 4. Don't know	42. **Rainy season** 1. Always 2. Sometimes 3. Never 4. Don't know
43	Do children in your household use the latrine for defection?	44. **Dry season** 1. Always 2. Sometimes 3. Never Don't know	45. **Rainy season** 1. Always 2. Sometimes 3. Never Don't know
46	Does anybody from neighbouring household use your latrine?	1. Yes 2. No	
47	If you don't have this latrine to use, where would you go to defecate?	1. Public latrine 2. Neighbour's latrine 3. Relative's latrine 4. Field/ forest 5. Other Specify……	
48	What kind of latrine do you have?	**Pour flush latrine to** 1. Piped sewer system 2. Septic tanks 3. Pit latrine 4. Else where 5. Don't know 6. Ventilated improved pit (VIP) latrine 7. Pit latrine with slab 8. Pit latrine without slab/open pit 9. Composting toilet 10. Other Specify…….	
49	What kind of below ground structure does your latrine have?	1. Unlined pit 2. Lined pit beneath latrine 3. Lined pit offset 4. Piped sewerage 5. Other 6. Don't know	
50	What kind of slab does your latrine have?	1. Wooden slab 2. Concrete slab 3. Pour flush 4. Western toilet bowl 5. Other specify……	
51	What kind of shelter walls does your latrine have?	1. Concrete/Brick 2. Fibrous cement 3. Galvanized steel 4. Wood 5. Thatch 6. Plastic sheet 7. Salvaged material 8. No walls	

		9. Other Specify…….
52	What kind of shelter roof does your latrine have?	1. Concrete 2. Fibrous cement 3. Galvanized steel 4. Tiles 5. Thatch 6. Plastic sheet 7. Salvaged material 8. No walls 9. Other Specify……
53	Do you use your latrine for bathing?	1. Yes 2. No
54	Do you use water to flush your latrine after defecation?	1. Yes 2. No
55	How much water per day does your household usually need to flush the latrine?	1. Less than 5 liters 2. 6-15 liters 3. 16 to 25 liters 4. More than 26 liters
56	Do you have enough water to flush the latrine in the dry season?	1. Yes 2. No
57	If no, Is the latrine you are using now your first latrine?	1. Yes 2. No 3. Don't know
58	If no, how many other latrines before this one have you built?	Nos: ----------
59	In what ways is your current latrine different from your old latrine?	1. Pit is now lined 2. Walls are improved 3. Roof is improved 4. Slab is improved 5. Has a pan 6. Pan is now pour- flush 7. Has ventilation 8. Has bathing area 9. Has had washing area 10. Has door 11. Other Specify…….
60	If yes, what year was your first latrine builds?	Year
61	Who made the final decision to build your first latrine?	1. Head of household 2. Head of household & Spouse jointly 3. Spouse 4. Family together 5. Other Specify…….
62	What made you to decide to build your first latrine at the time that you did?	1. Programme was offering subsidy 2. Someone told me I had to 3. Had enough money to buy 4. Sick/old relative 5. Children became physically mature 6. Social pressure 7. Construction of new house

		8. Neighbor got one 9. Event (wedding)/ funeral /new year 10. Had visitor from outside village coming 11. Other Specify…… 12. Don't know
63	Did you receive assistance from any organization to build your latrine? For example: (free/subsidized materials or labour, technical advice, loan etc.)	1. Yes 2. No 3. Don't know
64	If Yes, What assistance did you receive from the organization?	1. Free / Subsidized material 2. Free / Subsidized labour 3. Loan 4. Technical advice 5. Design provided 6. Encouragement 7. Other Specify…….
65	If no/ Don't How much did you pay for you latrine?	1. Total _____ 2. Material _____ 3. Labour _____ 4. In kind contribution value unknown
66	Did you build you latrine all at one time or in stages?	1. All at time 2. In stages 3. Don't know
67	How long did it take to complete your latrine?	1. Less than 2 weeks 2. 3-4 weeks 3. 1-6 months 4. 7-12 months 5. More than 13 months 6. Not yet completed
68	In the future, do you plan to make changes/improvement to your latrine?	1. Yes 2. No 3. Don't know
69	If yes, What changes / improvement do you plan to make?	1. Line the pit 2. Improve the walls 3. Improve the roof 4. Improve the slab 5. Get pan 6. Get pour flush pan 7. Add ventilation pipe to pit 8. Build water storage tank(s) 9. Build bathing area 10. Build hand wash area 11. Build door 12. More to inside the house 13. Other Specify……
70	If no, Has your latrine pit ever been emptied?	1. Yes 2. No 3. Don't know

71	If yes, what do you do with the contents?	1. Spread on field as fertilize 2. Dumped to the forest 3. Dumped in the river/pond/canal 4. Empty pit contents into new hole 5. Other Specify……
72	When the pit fills up, how long do you wait before empting?	1. None (empted right way) 2. Less than one month 3. 1-6 months 4. 7-12 months 5. More than 12 months 6. Don't know
73	Have you ever hired someone to empty your pit?	1. Yes 2. No 3. Don't know
74	If no/Don't know Did you hire anybody to build or help build you latrine?	1. Yes 2. No
75	If yes, where they from?	1. From village 2. From outside village 3. Don't know
76	Why did you pick this person?	1. Relative/ friend 2. Had hired before 3. Had good reputation 4. Saw and liked a latrine they had build 5. Least expensive 6. Other Specify…….
77	How did you learn about this person?	1. Community meeting 2. Recommended by family 3. Relative/friend 4. Recommended by latrine owner 5. Recommended by village chief 6. Recommended by someone in village 7. Recommended by material supplies 8. Recommended by ring producer 9. Recommended by NGO/agency 10. Poster/Advertisement 11. Radio 12. Other Specify…….
78	Who arranged the purchase of the materials, the hired person, the household or both?	1. Hired person 2. Household 3. Both
79	Where did you by the materials for building your latrine?	1. In your village 2. In your community 3. In your district 4. In the province 5. In another province 6. Other specify 7. Don't know
80	What are the name and location of the market where you	1. Name: _____ 2. Location: _____

	purchased the materials?	3. Don't know: _____

V. Non-Latrine Owners

81	Has your household ever gone through about or discussed building a latrine for your family?	1. Yes 2. No
82	If yes, when was the last time you discussed this?	1. Less than 1 month ago 2. 1-6 months ago 3. 7-12 months ago 4. More than 1 year ago
83	If no, Who in your household would make the final decision to build a latrine?	1. Head 2. Spouse 3. Husband and wife jointly 4. All (join decision) 5. Other Specify……..
84	If you are interested in having a person/mason build your latrine, have you identified the mason for the job?	1. Yes 2. No/ Not yet identified 3. Will build my own latrine 4. Don't know
85	If yes, are they from your village or from outside your village?	1. From village 2. From outside village 3. Don't know
86	Why did you pick this person?	1. Had hired before 2. Relative/friend 3. Has good reputation 4. Saw and liked a latrine he had build 5. Least expensive 6. Other Specify…….
87	How did you learn about this person?	1. Community meeting 2. Recommended by family 3. Relative/friend 4. Recommended by latrine owner 5. Recommended by village chief 6. Recommended by someone in village 7. Recommended by material supplies 8. Recommended by ring producer 9. Recommended by NGO/agency 10. Poster/Advertisement 11. Radio 12. Other Specify…….
88	If you built a latrine, where would you buy the material from?	1. In my village 2. In my commune 3. In my district 4. In my province 5. In other province 6. Other

		Specify……. 7. Don't know
89	What are the name and location of the market where you would purchase the material?	1. Name _____ 2. Location _____ 3. Don't know _____
90	Have you chosen a site for the latrine?	1. Yes 2. No 3. Don't know
91	For example, If return to your house one year from today how likely is it that you will have built a latrine at your house?	1. No chance 2. Low likelihood 3. Medium likelihood 4. High likelihood
92	What is the lowest amount that you would need to spend to build an acceptable latrine for your family?	Rs. _____ Riel
93	Do you currently have money saved towards buying a latrine?	1. Yes 2. No
94	Would you consider taking a micro finance loan to purchase a latrine?	1. Yes 2. No 3. Don't know

VI. Drinking Water Source:

95	What is the main dry season source of drinking water used for members of your household?	1. Piped water into dwelling 2. Piped water to yard/plot 3. Public tap/stand pipe 4. Tube well/bore well 5. Protected dug well 6. Unprotected dug well 7. Protected spring 8. Unprotected spring 9. Rain water collection 10. Improved rain water collection 11. Bottled water 12. Cart with small tank/drum 13. Tanker – truck 14. Surface water (river, dam lake, pond, stream, canal, irrigation channels) 15. Others Specify…….
96	How long does it take to go to the main source, to get water and come back?	1. On site 2. Delivered to home 3. Offsite 4. Don't know
97	How much drinking water do you use per day from the main source?	1. In liters per day _____ 2. Don't know
98	How much do you pay for drinking water from the main source?	1. In amount paid per day in riel _____

		2. Don't pay for drinking water 3. Don't know
99	What is the secondary dry season source of drinking water used for members of your household?	1. Piped water into dwelling 2. Piped water into yard/ plot 3. Public tap/ standpipe 4. Tube well / borehole 5. Protected dug well 6. Unprotected dg well 7. Protected spring 8. Unprotected spring 9. Rainwater collection 10. Improved rainwater collection 11. Bottled water 12. Cart with small tank/drum 13. Tanker-truck 14. Surface water (river, dam, lake, pond, stream, canal, irrigation channels) 15. Other Specify……..
100	How long does it take to go to the main source get water and come back?	1. On site 2. Delivered to home 3. Offsite _____months 4. Don't know
101	How much do you pay for drinking water from the main source?	1. In amount paid per day in Rs_____ 2. Don't pay for drinking water 3. Don't know
102	What is the secondary wet season source of drinking water used for members of your household?	1. Piped water into dwelling 2. Piped water to yard/plot 3. Public tap/standpipe 4. Tube well/borehole 5. Protected dug well 6. Unprotected dug well 7. Protected spring 8. Unprotected spring 9. Rain water collection 10. Improved rain water collection 11. Bottled water 12. Cart with small tank/drum 13. Tanker – truck 14. Surface water (river, dam lake, pond, stream, canal, irrigation channels) 15. Others Specify…….
103	How long does it take to go to the secondary source, get water and come back?	1. Delivered to home **2.** Offsite **3.** Don't know
104	How much drinking water do you use per day from the secondary source?	1. In liters per day _____

		2. Don't know
105	How much do you pay for drinking water from the secondary source?	4. In amount paid per day in riel _____ 5. Don't pay for drinking water 6. Don't know
106	What do you dislike the most about your main drinking water supply source?	**Dry season** 1. Too far 2. Not enough supply 3. Long weighting time to collect 4. Have to treat water 5. Long waiting tie to treat water 6. Taste is bad 7. High cost 8. Smells bad 9. Looks dirty 10. Bad for health 11. The area surrounding the source is not clean 12. Other Specify……..
107		**Rainy season** 1. Too far 2. Not enough supply 3. Long weighting time to collect 4. Have to treat water 5. Long waiting tie to treat water 6. Tastes bad 7. High cost 8. Smells bad 9. Looks dirty 10. Bad for health 11. The area surrounding the source is not clean 12. Other Specify……..
108	What do you like the most about your main drinking water source?	**Dry season** 1. Doesn't take a long time 2. Good health 3. Personal safety/security 4. Good taste 5. Convenient 6. No smell 7. Clean/good colour 8. Prestige 9. Good for visitors 10. Other Specify……..

109	””	**Rainy season** 1. Doesn’t take a long time 2. Good health 3. Personal safety/security 4. Good taste 5. Convenient 6. No smell 7. Clean/good colour 8. Prestige 9. Good for visitors 10. Other Specify……..	
10	How satisfied are you with your drinking water quality?	**109. Dry season** 1. Very satisfied 2. Satisfied 3. Unsatisfied 4. Very unsatisfied	**110.Rainy season** 1. Very satisfied 2. Satisfied 3. Unsatisfied 4. Very unsatisfied
111	Who in your household usually goes to collect water?	1. Adult women 2. Adult man 3. Female child (under 15 year) 4. Male child (under 15 year) 5. Don’t know 6. Other Specify……..	
112	Do you treat your water in any way to make it safer in drink?	1. Yes 2. No 3. Don’t know	
113	Why do you treat your water before drinking it?	1. Contaminated with dirt 2. Contaminated with faeces/human/animal waste 3. Contaminated with germs, bacteria and viruses 4. Good for health (appearance) 5. Animals use the water 6. Smell bad 7. Looks bad 8. Insects in it 9. So I don’t get sick 10. Don’t know 11. Other Specify……..	
114	How do you treat your water?	1. Boil 2. Add bleach chlorine 4. Strain it through a cloth 5. Use a ceramic water filter 6. Use a sand filter 7. Solar disinfection 8. Let it sand and settle 8. Don’t know 9. Other Specify……	

115	How often do you treat your water before drinking?	1. Always 2. Usually 3. Sometimes 4. Never 5. Don't know
116	Apart from drinking water do you use the treated water for?	1. To prepare infant formula/infant food 2. To cook 3. To wash/ prepare food 4. To wash dishes 5. To wash cloths 6. To wash hands 7. To bathe 8. Other Specify……..
117	How important to you is treating your water for drinking?	1. Very important 2. Quite important 3. Not so important 4. Not important at all 5. Don't know
118	Do you ever buy treated bottled water for drinking?	1. Yes 2. No
119	How much do you pay per bottle of treated water?	…… R/L
120	If no, Have you ever considered buying treated bottled water for drinking?	1. Yes 2. No
121	If you have considered buying treated bottle water, why don't you buy it?	1. Treated water is too expensive 2. No money 3. Treated water is not available 4. Too far to point of sale 5. Don't like taste/smell 6. Other Specify……..
122	How much would you be willing to pay to treated bottle water?	_____ R/L
123	If no, Do you ever buy untreated water for drinking?	1. Yes 2. No
124	How much do you pay per liter of untreated drinking water?	_____ R/L

VII. Hygiene:

125	How often do you wash your hands with soap?	1. More than three times per day 2. Two to three times per day 3. Once per day 4. Once every 2-3 days 5. Less than once per week 6. Almost never
126	Why do you wash your had with soap?	1. To remove dirt/make clean 2. Personal appearance/to look good 3. To make them smell good 4. To prevent disease 5. To remove microbes/ bacteria 6. Other Specify…….
127	When do you usually wash your hands with soap?	1. When they are dirty 2. Where returning to the household 3. Before eating 4. After eating 5. After defection 6. Before going to sleep 7. Before preparing food 8. After walking up 9. Before washing baby 10. After washing baby 11. Other Specify…….
128	Do you wash hands with soap in a designated hand washing place?	1. Yes 2. No
129	If no, Where do you usually wash your hand with soap?	1. At the water source 2. In the latrine 3. Near the latrine 4. In the kitchen area 5. Other Specify……
130	If yes, What do you do in your household to prevent children from getting diarrhea?	1. Pray to spirits/ancestors 2. Cook food properly/eat soon after cooking 3. Be careful about what kinds of food you eat 4. Boil drinking water 5. Wash vegetable with clean water 6. Make formula with clean water 7. Wash hands with soap after defecation 8. Wash hands with soap before preparing food/eating

		9. Wash hands wash soap after cleaning child's anus 10. Clean cooking and eating utensils 11. Don't know 12. Other Specify…….
131	What hygiene advice have you heard before?	1. None 2. Use a latrine 3. Drink safe water 4. Store water safely 6. Wash hands 7. Wash hands with soap 7. Good food hygiene 8. Waste water/stagnant water management 9. Safe disposal of babies faeces 10. Other Specify……
132	From which of the following source have you hand hygiene advice in the past year?	1. Community meeting 2. Village chief 3. Neighbours 4. Relative 5. Radio 6. Poster/picture 7. Billboard advertisement 8. Television advertisement 9. NGO/agency worker 10. Government representative 11. Health centre 12. Health worker 13. Schools/ teachers 14. Wat/religious leader 15. Don/t know 16. Other Specify……

VIII. Communication:

133	How many people in the household are members of a community group?	1. 0 2. 1 3. 2 4. 3 5. Other Specify……
134	How often do you travel outside the village?	1. More than once per week 2. Once per week 3. 1-2 time per month 4. Less than once per month 5. Less than once per year 6. Rarely 7. Never
	In your opinion, which of the following would be able to give	

	trustworthy information about building or purchasing sanitation and water products?	
135	Mason	1. Very good information source 2. Acceptable /average information source 3. No a good information source 4. Don't know
136	Concrete ring producer	1. Very good information source 2. Acceptable /average information source 3. No a good information source 4. Don't know
137	Shop/seller	1. Very good information source 2. Acceptable /average information source 3. No a good information source 4. Don't know
138	Government Officer	1. Very good information source 2. Acceptable /average information source 3. No a good information source 4. Don't know
139	NGO Workers	1. Very good information source 2. Acceptable /average information source 3. No a good information source 4. Don't know

IX. Waste Management:

140	Where do store the waste of kitchen	1. Dust bin 2. Corner of wall 3. Throw outside
141	When do you clean your kitchen	1. Daily 2. Once in a week 3. Once in Fortnight 4. Once in a month
142	How do segregate your kitchen waste	1. Plastic waste 2. Vegetable waste 3. Glass waste 4. Others
143	Where do you dispatch the waste of kitchen	1. Pit 2. Away from house 3. Outside the house 4. Other
144	What do you do kitchen used solid waste	1. Burn 2. Throw in to pit 3. Reclining 4. Compost making
145	What do you do kitchen used	1. Store in tub

	liquid waste	2. Throw into street 3. Drinks to cattle
146	What do you do the bath water	1. Flow into street 2. Flow into soap pit 3. Flow in to kitchen garden 4. Flow in to open/closed drainage
147	Where do you throw the cattle's dung	1. Throw in to manure 2. Throw in to street 3. Put in to bio-gas plant
148	Do you have bio-gas in your home?	1. Yes 2. No
149	If yes, from where do you bring the raw material for it?	1. Cattles dung 2. Joint with toilet 3. Kitchen waste 4. Others

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GRT Golden Research Thoughts

SANITATION AND WOMEN

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ABSTRACT

India is growing very fast; its population plus economy both are showing that India will soon join the developed country list. But there are few problems where India is lying below under developed nation. Toilets for women are among one of those major problems. The gap between urban population and rural population is one of the reasons behind it. This gap is in everything including education, job options, economy, living style, etc. Due to the lack of education and money people are not able to think anything more than food and clothes.

KEYWORDS:*Sanitation and Women , population plus economy , major problems.*

INTRODUCTION :

They are not aware of the problems which may be caused due to open defecation. Most people worldwide who defecate in the open live in India. Open defecation has dire consequences it kills babies, impedes the physical and cognitive development of surviving children, and reduces the human capital of India's workforce. Open defecation is associated with significant negative externalities: it releases germs into the environment which harm the rich and the poor alike even those who use latrines.

Poor sanitation spreads bacterial, viral, and parasitic infections including diarrhea, polio, cholera, and hookworm. Despite this, 70% of rural Indian households defecate in the open, without a toilet or latrine. Over 60% of the people worldwide who defecate in the open live in India. Bangladesh, which shares a border with India, has a rural open defecation rate of only 5% (WHO and UNICEF 2014). Harassment and rape cases are mostly seen during open defecation. Hence, safety of females is threatened. Considerable amount of time is wasted in going and returning to remote places for open defecation.

WHY FOCUS ON SANITATION?

Wherever humans gather, their waste also accumulates. Progress in sanitation and improved hygiene has greatly improved health, but many people still have no adequate means of disposing of their waste. This is a growing nuisance for heavily populated areas, carrying the risk of infectious disease, particularly to vulnerable groups such as the very young, the elderly and people suffering from diseases that lower their resistance. Poorly controlled waste also means daily exposure to an unpleasant environment. The buildup of faecal contamination in rivers and other waters is not just a human risk: other species are

affected, threatening the ecological balance of the environment. The discharge of untreated wastewater and excreta into the environment affects human health by several routes:

- By polluting drinking water;
- Entry into the food chain, for example via fruits, vegetables or fish and shellfish;
- Bathing, recreational and other contact with contaminated waters;
- By providing breeding sites for flies and insects that spread diseases;

SANITATION:

Sanitation can be defined as the safe disposal of human excreta and is associated with hygiene promotion. Sanitation is important as it separates humans from excreta. A safe toilet accompanied by hand washing with soap, provides an effective barrier to transmission of diseases. Despite rising incomes and living standards from India's two-decade-old economic boom, India still has an estimated 626 million people who live in households without toilets with a total population of 1.27 billion; this means that nearly half of India's population practices "open defecation." According to the World Health Organization (WHO), the practice has dire consequences for health especially for the healthy development of children and women.

MEANING OF SANITATION:

Etymologically, the word SANITATION is derived from French sanitas, which means health. Thus Environmental Sanitation is as act or process of making the environment sanitary, healthy or hygienic.

DEFINITIONS:

1. National Sanitation Foundation of USA as a follows: "Sanitation is a way of life. It is the quality of living hat is expressed in the clean home, the clean business, the clean neighborhood and the clean community. Being the way of life, it must come from within the people; it is nourished by knowledge and grows as an obligation and an ideal in human relations".

2. IRC (Indian Rural Council): Sanitation is "The management of disposal, treatment and reuse of human excreta, solid wastes and waste water; supported by good hygiene behavior, in order to ensure environmental conditions in human settlements which promote the well –being and health of the population".

3. The WHO (World Health Organization) "Environmental sanitation as the control of the factors in man's physical environment which exercise or may exercise a deleterious effect on his physical development health and survival".

REVIEW OF LITERATURE:

WHO and UNICEF (2014) Reported "Currently 2.5 billion people live without access to basic sanitation, and approximately 1 billion practice open defecation, most of them living in rural areas. This sanitation crisis is detrimental not only to women's health but also to their education, dignity, community status, and over all well-being. With improved sanitation, women all over the world will experience an elevated standard of living in several aspects. Most women without access to basic sanitation, such as a latrine, must wait for nightfall and an empty field in order to defecate in private, a practice which has serious side effects for many women. Waiting so long to defecate leads to increased chances for urinary tract infections, chronic constipation, and psychological stress. Many women who are going out alone at night are also at risk of physical and sexual assault.

UN Water, Interagency Task Force on Gender and Water (GWTF) (2006), they briefing the policy matter of sanitation they focused on the symptoms of menstruation, pregnancy and the postnatal period also become problematic if there are not adequate areas to properly deal with them. Many girls are forced to leave school once they reach puberty and menstruate simply because there are no facilities or supplies accessible to them, and those who choose to stay often miss class during their menstrual cycle, making it harder for them to succeed in the classroom. Furthermore, adult female teachers working in schools without sanitation, or women small business owners and employees without access to nearby facilities, must choose between the indignity and health risks of caring for themselves in the open or leaving work.

UN Water, Interagency Task Force on Gender and Water (GWTF) (2006), "Many women are leading efforts in their communities for access to safe water and adequate sanitation. As women continue to involve themselves directly in the technical operations and management of water and sanitation services they are increasingly seen as skilled workers capable of achieving high levels of training and expertise. Along with this increase in status many women find themselves in a position to generate income as either a direct or indirect effect of increased sanitation. The International Water and Sanitation Centre found from studying 88 water and sanitation projects in 15 countries that projects including the full participation of women are more effective and sustainable than those that are not".

Women play a vital role in raising awareness about water and sanitation issues in their communities, and improved water and sanitation sources are the first steps to empowering women in developing countries. Life water strives to provide entire communities with education on disease transmission, effective latrine construction, operation and maintenance, as well as changing social attitudes and behaviors towards proper waste disposal in the hopes of bettering the lives of billions.

Manjari (2015), in her epidemiological review paper provides an analytical review of the current situation of sanitation in India, and its impact on health and other societal factors. Accelerating progress on sanitation in India remains one of the global development agenda's most urgent yet most difficult challenges. The problem of sanitation is receiving considerable attention worldwide. Sanitation is an important development indicator; United Nation has given it a strong priority in Millennium Development Goals (MDG). Poor sanitation, hygiene, quality and quantity of water are one of the main reasons behind more than 80% of reported cases of infectious diseases in India. Numerous national and international efforts have been made over the past few decades to enhance sanitation in India. Nonetheless, the net result is reported to be not proportionate to the efforts and money spent. Upon analysis of national level political, economic and social dynamics this study reveals that low political priority, lack of properly designed, penetrated awareness programs, poor delivery mechanism, beneficiary participation, lack of research and innovation are prime barriers towards achieving total sanitation.

METHODOLOGY:

The paper is based on the secondary data source and observations in daily routine life of rural and urban women. This source like various past field studies, reference books, research journals, census data and report were used.

OBJECTIVES OF THE STUDY:

1.To know the importance of the sanitation
2.To understand the importance of toilets
3.To know health problems of women

SANITATION, TOILET IN RURAL AND URBAN AREA:

Focuses on sanitation in rural India for several reasons. First, open defecation is far more common in rural India than in urban India. In rural area, 30.7% households have latrine with in premises, 1.9% households use public latrine and rest i.e. 67.3% practice open defecation. This data for India level is 46.9%, 3.2% and 49.8% respectively and that for the urban area is 81.4%, 6% and 12.6% (census 2011). Comparison among these suggests that problem is more in the rural areas. The most dangerous practice of open defecation is the highest in rural areas and is almost five times higher than urban areas. In this light let us see dynamics of sanitation in the rural areas. People in rural areas use toilets inside houses, defecate in open fields or use community toilets. In all these three utmost care must be taken. In our tradition it is mentioned that a small ditch should be used for defecation and covered by the nearby soil after the use. That way it worked as manure after decomposition and houses were well away from the excreta. One could freely do so without fear of being seen by others because population was very less. But in today's context, increasing population has put immense pressure on land as a result of which land holding size has become very small. So, it is almost not feasible to use such ditch concept for

related needs that are deeply embedded within gender-specific cultural values of dignity and shame. It is now increasingly recognized that gender-responsive sanitation does not mean only 'separate toilets for women' that response to women's physiological need to relieve themselves but should also respect the integrity, dignity and status of women in the process. The link between inadequate sanitation and violence against women has also seldom been explored.

Equally important as the physical health impact of sanitation are the mental and social health consequences of the various forms of emotional stress resulting from limited access to sanitation facilities, whether at home, at the workplace, in schools, when traveling or during long visits to public places such as markets. Cultural values resulting in gender inequity make women particularly vulnerable even where toilet facilities are available, and further amplify the stress arising from limited sanitation. Women who practice open defecation are likely to face higher levels of psychosocial stress compared to those with access to latrines as a result of deeply ingrained feelings of shame and indignity related to nudity and defecation. For open defecation, women often have to wait till dark or rise early, confront the fear of physical and sexual harassment and relieve themselves in haste. The link between sanitation and psychosocial stress is not well-studied, however.

CONCLUSION:

Women who have improved sanitation facilities close to home and work enjoy better health and are able to work more productively. When their families are healthier, women and girls also spend less time caring for sick family members.

Lack of awareness stand out as the predominant reason in both the case ,one those household having toilets but not familiar to use it and second are those household whose prioritize assets such as television ,washing machine, refrigerators ,cell phone etc over availability of toilets. Open defecation in rural areas continues to be a socially and culturally accepted traditional behavior at large, by both rich and poor. Large scale efforts needed to create and sustain community demand for hygiene and sanitation. Effective Information, Education and Communication (IEC) come out as the most important requirement to realize the importance of toilet for the people. IEC needs to strengthen so as to motivate people in adopting better sanitation practices.

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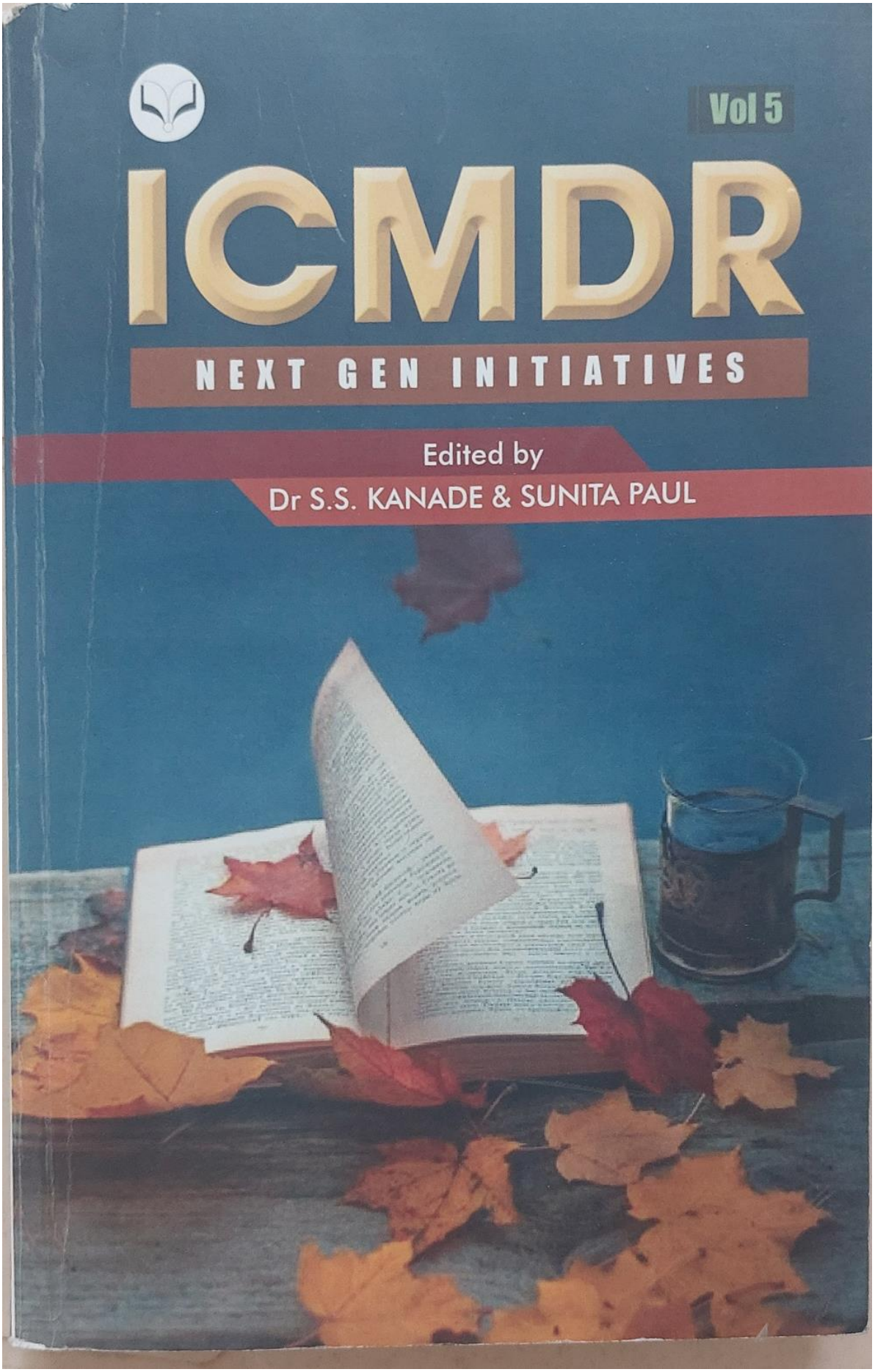
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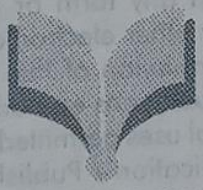

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Knowledge and Practice of Personal Hygiene Among School Going Children in Vijayapura Slum

Dr. Kalavati H Kamble

Abstract:

Context: Hygiene refers to practices that help maintain health and prevent the spread of diseases. School children are particularly vulnerable to the neglect of basic personal hygiene. The increased burden of communicable diseases among school children due to poor personal hygiene practice and inadequate sanitary condition remains a concern on the public health agenda in developing countries.

Aims: To assess the basic hygiene practices among school children in Vijayapur slum of Karnataka

Methods and Material: This cross sectional and

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observational study was carried out among 100 randomly selected school children from one for a period of two months using a pretested, structured questionnaire containing questions on personal and household hygiene practices. Data was entered into excel and statistical analysis was done using SPSS v.21.

Results: The participants were between 13-16 years. 100% students had healthy hygiene practices. Most of the hygiene practices like brushing teeth, hand washing, bathing and throwing wastes in dustbin were good and certain practices like trimming nails once a week, not biting nails, wearing washed clothes daily and drinking boiled water moderate in the study participants.

Conclusions: Future of the society depends on the health of its children. Most of the students were practicing hygienic methods with few neglected practices among them. Sustained personal hygiene education with greater involvement of parents and frequent medical examinations may yield more benefit to the students. Keywords: Personal hygiene, School children, Practice

Introduction:

The foundations of lifelong responsibility for the maintenance of personal hygiene are laid down in childhood, which is important for a healthy childhood, for a healthy adulthood and for the development of positive values about health and the use of health services. Poor health among school children is resulted from the lack of awareness of the health benefits of personal hygiene. Diarrhoeal diseases, skin diseases, worm

infestations and dental diseases are most commonly associated with poor personal hygiene. One of the major problems faced by school children are infections. The primary causes of infections are contaminated water and poor sanitation, as well as poor hygienic practices. Lack of personal hygiene coupled with poor sanitation favor person-to-person transmission of infection. Infection and malnutrition form a vicious circle and retard children's physical development. Repeated attacks of infections often compound the existing poor health of children, compromising children's attendance and performance at school and not uncommonly, can result in death.

Hygiene is one of the pivotal parts of life. It is very necessary for living a healthy life style. However, hygiene is extensive term of science which indentures with promotion and protection of health, eventually, preceding the individuals' healthy behavior. In fact, the word hygiene is derived from the Greek word "Hygieia" which means the spirit of health purity, sanitation and cleanliness. Therefore, personal hygiene considered in broad category of health, such as face, hand, oral, hair, nail and feet hygiene. However, it does vary from person to person to follow these personal hygienic practices but it's depending upon their family norms, culture and society etc.

A majority of morbidity and mortality in developing countries is attributed to communicable diseases. 31% of all deaths in Southeast Asia, are caused by infectious diseases and this trend is especially notable in developing countries where acute respiratory and intestinal infections are the

primary causes of morbidity and mortality among young children. Lack of proper hygiene and sanitation facilities increases burden of communicable diseases among developing countries.

The human body provides protection against external environment pollutants to some extent. However, skin cracks and wounds can allow pathogens to enter the body. For this reason, personal hygiene is one of the most important practices in terms of protecting the body from diseases. Hygiene is a personal matter. Hygiene practices, taught during childhood by mothers, fathers or teachers, mostly through practicing, need to be continued by the individual after childhood. Correct adoption of these habits has a direct impact on a person's future health.

Hygiene behaviour includes hand hygiene, personal care, home hygiene and food hygiene. Individual hygiene behaviours can be affected by many factors, including beliefs, values, habits, socio-economic and cultural factors, level of knowledge Personal preferences, family characteristics and physical and social characteristics of the work and living environments. Therefore, the hygiene habits of each individual differ, meaning that these habits are unique to individuals.

The most important aspect of maintaining good health is good personal hygiene. Personal hygiene which is also referred to as personal care includes all of the following: Bathing and Showering, Hair care, Nail care, Foot care, Genital care, and Dental care Personal hygiene is keeping the body clean, and helps prevent the spread of germs.

Grooming is caring for fingernails and hair examples of these activities would be styling hair, shaving, trimming and painting fingernails. Maintaining good health also includes the following areas: Nutrition, Leisure/recreation opportunities, sleep, and exercise. As you can see, there are many factors that contribute to feeling and looking good. Feeling and looking good are important to each individual's emotional and physical wellbeing. Maintaining personal hygiene is necessary for many reasons; these can be personal, social, for health reasons, psychological or simply as a way of life. Essentially keeping a good standard of hygiene helps to prevent the development and spread of infections, illnesses and bad odours.

Previously many of the research conducted about hand hygiene indicated that children with proper hand washing practices are less likely to report gastrointestinal and respiratory symptoms. Previous reports suggests that hand washing with soap reduces morbidity due to diarrheal diseases by 44% and respiratory infections by 23%. World Health Organization reports that every year, 3.8 million children aged less than five die from acute diarrheal diseases and acute respiratory tract infections. Globally, 88% of diarrheal deaths are associated with use of unsafe water, inadequate sanitation and poor hygiene practices.

Lack of awareness regarding personal hygiene usually lands school children in poor health. Poor hygiene is usually associated with acute gastro-intestinal disorders, skin related conditions, helminthic infestations and dental diseases. Communicable diseases are one of the most common problems faced by school going children.

Use of contaminated or unsafe water, poor sanitation and poor hygienic practices are the primary causes of infections. Lack of personal hygiene along with poor sanitation practices usually favors human-human transmission of infection. Hence, Infection and malnutrition becomes a vicious circle and affects physical development of children adversely.

Materials and Methods

Objectives of the study:

1. To assess the knowledge of the high school students on personal hygiene.
2. To assess the practices of the high school students on personal hygiene

Research Design: Cross-sectional observational study.

Place of study: One purposively selected Government Aided school situated in a semi slum at Vijayapura city of Karnataka

Duration of study: Two months.

Study population: High school children in grade 8 to 10th from selected school, where the students come mainly from the semi urban slum locality.

Study tool: A pre-designed, pre-tested and structured questionnaire.

Methodology: Permission was obtained from the school authority. The questionnaire was drawn up in English. Before starting of the study, pre-testing of the questionnaire was done in a different school situated in the same slum locality and accordingly necessary modifications were made and this was finalized. The selected school was visited on a pre-

assigned day of each week and one grade was covered every week. There were average of 30-35 students enrolled per grade. Total 100 students were studying in this school. All students were included in the study. The class teacher of each grade was explained the purpose of the study. Good rapport was built up with the students and informed verbal consent was obtained from them. Briefing was done regarding the questionnaire provided to the students and they were asked to mark the responses. The questionnaire consisted of socio-demographic information, e.g. age, grade, sex, religion, caste, questions regarding knowledge and practice of personal hygiene etc,.

Analysis of data: Data obtained were collated and analyzed statistically by simple percentage.

Result:

Table No1. Demographics characteristics of the study population

Socio-demographic characteristic	Frequency	Percentage
Sex		
Male	52	52
Female	48	48
Total	**100**	**100**
Age		
12-13	25	25
14-15	25	25
16-17	50	50
Total	100	100
Education		
8th	32	32
9th	32	32
10th	46	46
Total	**100**	**100**
Religion		
Hindu	80	80
Muslim	20	20
Total	**100**	**100**
Caste		
Lingayat	20	20
Maratha	24	24
Holer	16	16
Lambani	12	12
Muslim	20	20
Madar	08	08
Total	**100**	**100**

A total number of 100 high school students of Government Aided participated in the study in which 52% of them were males and 48% were female. Majority of the respondents (50%) were between the ages of 16-17 years. The result also showed that the percentage distribution of the students in their various classes were very close as we have 46% in 10th classes. Largest percentages of them were Hindus (80%) as shown by the result. (24%) of them were Maratha community as shown in table 1.

Table No.2 Distribution of personal hygiene knowledge of respondents

Variable	Frequency	%
Have you ever heard about the term "personal hygiene"?		
Yes	100	100
No	00	00
Total	**100**	**100**
Where did you find out about it?		
School	88	88
Parents	12	12
Total	**100**	**100**
Personal hygiene includes practiced by individuals to care for ones bodily health and well being through cleanliness?		
True	100	100
False	00	00
Non-response	00	00
Total	**100**	**100**
Personal hygiene includes cleanliness of the body and cloths?		
True	100	100
False	00	00
Total	**100**	**100**
Personal hygiene includes regular brushing and flossing of teeth		
True	100	100
False	00	00
Total	**100**	**100**
Personal hygiene includes regular and proper hand washing?		
True	100	100
False	00	00
Total	**100**	**100**

Personal hygiene includes regular and proper hand washing?		
True	100	100
False	00	00
Total	**100**	**100**
Personal hygiene includes balanced diet, rest and exercise?		
True	72	72
False	24	24
Non response	04	04
Total	**100**	**100**
Personal hygiene includes seeing a Doctor?		
True	72	72
False	28	28
Non- response	00	00
Total	**100**	**100**
Personal hygiene includes seeing a Dentist?		
True	72	72
False	28	28
Non response	00	00
Total	**100**	**100**

Personal hygiene knowledge levels of the respondents. The result showed in table 2 above that 100 (100%) of the respondents had heard of the term 'personal hygiene'. School constituted the largest source of information about personal hygiene accounting for 88% of responses. Parents accounted for 12%. Out of out (100%) of respondents responded true to personal hygiene as practices performed by individual to care for ones bodily health and well being through cleanliness. All the respondents responded true to personal hygiene includes cleanliness of the body and clothes. 100% of respondents responded true to personal hygiene includes regular brushing and flossing of teeth. 100% of respondents responded true to personal hygiene includes regular and proper hand washing. 72% of respondents agreed that personal hygiene includes balanced rest and exercise. About 72% responded true to seeing a doctor and dentist respectively as part of personal hygiene.

Table no. 3. Distribution of personal hygiene practice level of respondents

Variable	Frequency	Percentage
Do you take a bath every day?		
Yes	96	96
No	04	04
Total	**100**	**100**
How many times in a day?		
1-2 times	88	88
3-4 times	12	12
Non response	00	00
Total	**100**	**100**
Do you brush your teeth every day?		
Yes	96	96
No	04	04
Total	**100**	**100**
How many times in a day?		
1-2 times	84	84
3-4 times	16	16
Non response	00	00
Total	**100**	**100**
How often do you cut your nails?		
Daily	12	12
Weekly	76	76
Monthly	12	12
Rarely	00	00
Non response	00	00
Total	**100**	**100**
How often do you wash your hair?		
Daily	44	44
Weekly	56	56
Monthly	00	00
Once in 3 month	00	00
Non response	00	00
Total	**100**	**100**
Do you wash your hands before eating?		
Yes	100	100
No	00	00
Total	**100**	**100**
Do you wash your hands after using toilet		
Yes	96	96
No	04	04
Total	**100**	**100**
How often do you see your Doctor in a year in the absence of illness?		
Regularly	64	64

Personal hygiene practices level of the respondents. The result showed in table 3 above that 96% of the respondents said they took a bath every day. 88% took a bath 1- 2 times daily 12% had their baths 3- 4 times daily. 96% of respondents brushed their teeth daily. 84% brushed their teeth 1- 2 times daily while 16% brushed their teeth more than 2 times in a day. 76% of the respondents said they cut their nails weekly followed by 12% which reported they cut their nails daily and monthly. 56% of the respondents said they wash their hair weekly followed by 44% which wash their hair daily. 100% of the respondents were washed their hands before eating and 96% of the respondents were washed their hands after using toilets. About 64% and 60% responded they often see their doctor and dentist respectively in a year in the absence of illness. 80% of the respondents responded yes to eating balanced diet, exercise and rest well.

Discussion:

This study was conducted to assess the personal hygiene knowledge and practices of the secondary school students of Government added High school situated in semi slum area of Vijayapura city of Karnataka. A total of 100 secondary school students were involved in this study. The largest percentage of the participants comes from the 16-17 (50%) years age group. This is not surprising as most primary schools turn out most of their students from primary 5 when they age an average of about 10 years. The result also showed higher Hindu respondents and Maratha caste respondents than any other religions and caste respectively. This result can be explained by the

fact that the sampled Government Aided School is High school a Scheduled Caste management school located in Vijayapur city.

This invariably shows that the study environment will usually reflect the characteristics of the study population. Knowledge of respondents on personal hygiene Majority of the respondents (100%) have heard about the term personal hygiene. This can be explained by the fact that the subject is taught in ancillary topics especially in high school in subjects like social studies and home economics. This further strengthened by the fact that majority of the respondents found out about it from school followed by parents' source of information by the respondents. This result is supported by a similar study by Bastos (2010) and it shows that the concept of personal hygiene is not taken too seriously outside the confines of the academic environment. Majority of the respondents (100%) agreed that personal hygiene includes all practices performed by an individual to care for ones bodily health and well being through cleanliness. The result obtained in this study is supported by a similar study of Bastos (2010) which showed that all the respondents agreed true to the definition of personal hygiene. In another similar study by Kumar et al, 2015, about 85.5% of the respondents knew correctly the meaning of personal hygiene. All the respondents agreed that personal hygiene includes cleanliness of the body and clothes. Almost all the participants (100%) viewed regular brushing and flossing of teeth as part of personal hygiene. Majority of the respondents (100%) viewed regular and proper hand washing as part of personal

hygiene. Also, most of the respondents (72%) responded true to personal hygiene including balanced diet, rest and exercise. This shows a good degree of knowledge among participants.

This can be explained that most of these issues are covered in part of their curriculum at some point in time or other during the course of study. However, the level of knowledge dropped to about 64% and 60% when asked if personal hygiene involved seeing a doctor and a dentist respectively. They not too impressive degree of knowledge shown by the respondents on the issue of visiting a doctor or dentist as part of personal hygiene can be explained by the fact that hospitals and clinics are viewed as places to be visited by the sick and hence most individuals would not visit one except there is a pressing issue. Practices of respondents on personal hygiene Almost all the respondents (96%) claimed to have their baths everyday with 88% of the total respondents having their bath 1-2 times a day. In a similar study by Ali et al, 2013, 85.17% were accustomed to taking their bath regularly. A similar result was obtained about oral hygiene with 96% brushing their teeth every day and 84% of the respondents reported brushing their teeth 1- 2 times in a day. Approximately 69 percent of the study sample brushed their teeth at least twice daily in a study by Al- Wahadni et al, 2006. Talinova, 2008, 90 % of the grammar school students replied they cleaned their teeth twice a day. This can be attributed to the fact that most of the respondents are teenagers and are likely to carry out these activities as they foster peer acceptance upon which outward appearance is based and which is also highly valued at this stage

of their lives. Also, 76% of the respondents reported they cut their nails weekly. This result was supported by another study by Ghose et al, 2012 although slightly higher where 74.2% of the students were found trimming their nail once a week. Also in this study 56% of the respondents reported washing their hairs daily. The practice of the respondents about washing of hands is 100%. The percentage of the respondents who practiced seeing their doctors and their dentists regularly in the absence of illness were 64% and 60% respectively. The findings of this study was supported by a study by Ogundele et al, 2008 who reported that only few of the adolescents go for dental check up at least once a year. This result was in contrast to a study by Talinova, 2008 where 80 % of the grammar school students undergo regular dental examination at least twice per year. Also, 80% of the respondents practiced eating balanced diet, take exercise and rest.

Conclusion:

The outcome of this study reveals that majority of the high school students considered in this study have good level of personal hygiene knowledge and a good number of them have high level of personal hygiene practices.

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ಕರ್ನಾಟಕ ಸೈನ್ಸ್ ಕಾಂಗ್ರೆಸ್ 15-17 ಸೆಪ್ಟೆಂಬರ್ 2016, ಬೀದರ

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15-17TH SEPT. 2016, BIDAR

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ಸಮ್ಮೇಳನ ಕಾರ್ಯದ ಶಿಕ್ಷಣದ ವಿಭಾಗ, ಕ.ರಾ.ಮ.ವಿ.ವಿ, ವಿಜಯಪುರ ಸಂಸ್ಥೆಯಿಂದ

ದಿನಾಂಕ 15–17 ಸೆಪ್ಟೆಂಬರ್ 2016 ರಂದು ನಡೆದ 12ನೇ ಕನ್ನಡ ವಿಜ್ಞಾನ ಸಮ್ಮೇಳನ ದಲ್ಲಿ

ಭಾಗವಹಿಸಿ / ಪ್ರಬಂಧವನ್ನು ಮಂಡಿಸಿದ್ದಾರೆ / ~~ಕಾರ್ಯಕ್ರಮದ ಅಧ್ಯಕ್ಷತೆ ವಹಿಸಿದ್ದಾರೆ~~ / ~~ಕಾರ್ಯಕಾರಿ ಸಮಿತಿ ಸದಸ್ಯರಾಗಿ~~

ಇವರ ಭಾಗವಹಿಸುವಿಕೆಯಿಂದ ಸಮ್ಮೇಳನವು ಯಶಸ್ವಿಯಾಗಿರುವುದಕ್ಕೆ ಹೃದಯಪೂರ್ವಕವಾಗಿ ಅಭಿನಂದಿಸುತ್ತೇವೆ.

ಪ್ರಬಂಧ ಶೀರ್ಷಿಕೆ ಸಂಪೂರ್ಣ ಸ್ವಚ್ಛತ ಭಂಡೊಲನ

ಡಾ. ಎಸ್. ಜಿ. ಸಿದ್ಧಪ್ರಕಾಶ
ವಿಶ್ರಾಂತ ನಿರ್ದೇಶಕರು, ಕ. ವಿ. ಪ. ಮಂ. ವಿ. ವಿ, ಬೀದರ
ಉಪಾಧ್ಯಕ್ಷರು, 12ನೇ ಕನ್ನಡ ವಿಜ್ಞಾನ ಸಮ್ಮೇಳನ

ಶ್ರೀ ಹೆಚ್. ರಮೇಶ
ಪ್ರಧಾನ ಕಾರ್ಯದರ್ಶಿ, ಸ್ವದೇಶಿ ವಿಜ್ಞಾನ ಆಂದೋಲನ-ಕರ್ನಾಟಕ ಮತ್ತು
12ನೇ ಕನ್ನಡ ವಿಜ್ಞಾನ ಸಮ್ಮೇಳನ

B.V.
ಡಾ॥ ಶಿವಪ್ರಕಾಶ
ಡೀನ್, ಪಶುವೈದ್ಯಕೀಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ
ಉಪಾಧ್ಯಕ್ಷರು, 12ನೇ ಕನ್ನಡ ವಿಜ್ಞಾನ ಸಮ್ಮೇಳನ

ಆಯೋಜಕರು
ಸ್ವದೇಶಿ ವಿಜ್ಞಾನ ಆಂದೋಲನ-ಕರ್ನಾಟಕ
ಹೆಬ್ಬಾಳ, ಬೆಂಗಳೂರು-560 024

ಜಂಟಿಆಯೋಜಕರು
ಕರ್ನಾಟಕ ಪಶುವೈದ್ಯಕೀಯ, ಪಶು ಹಾಗೂ ಮೀನುಗಾರಿಕೆ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೀದರ
ಸಹಯೋಗ: ಹೈದರಾಬಾದ್-ಕರ್ನಾಟಕ ಪ್ರದೇಶ ಅಭಿವೃದ್ಧಿ ಮಂಡಳಿ, ಕಲಬುರ್ಗಿ

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On

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This is to certify that / Mr./ Mrs./ Dr./ Prof. Kalavati Kamble

has Presented a paper entitled The impact of total Sanitation Campaign in Vijayapura District

In the ICSSR Sponsored Two Day's National Seminar on "Swastha Bharat In India : Problems - Prospects and Way Forward "

Organized by Department of Studies in Physical Education and Sports Sciences,

Karnataka State Akkamahadevi Women's University, Vijayapura, held on 16th and 17th June 2022

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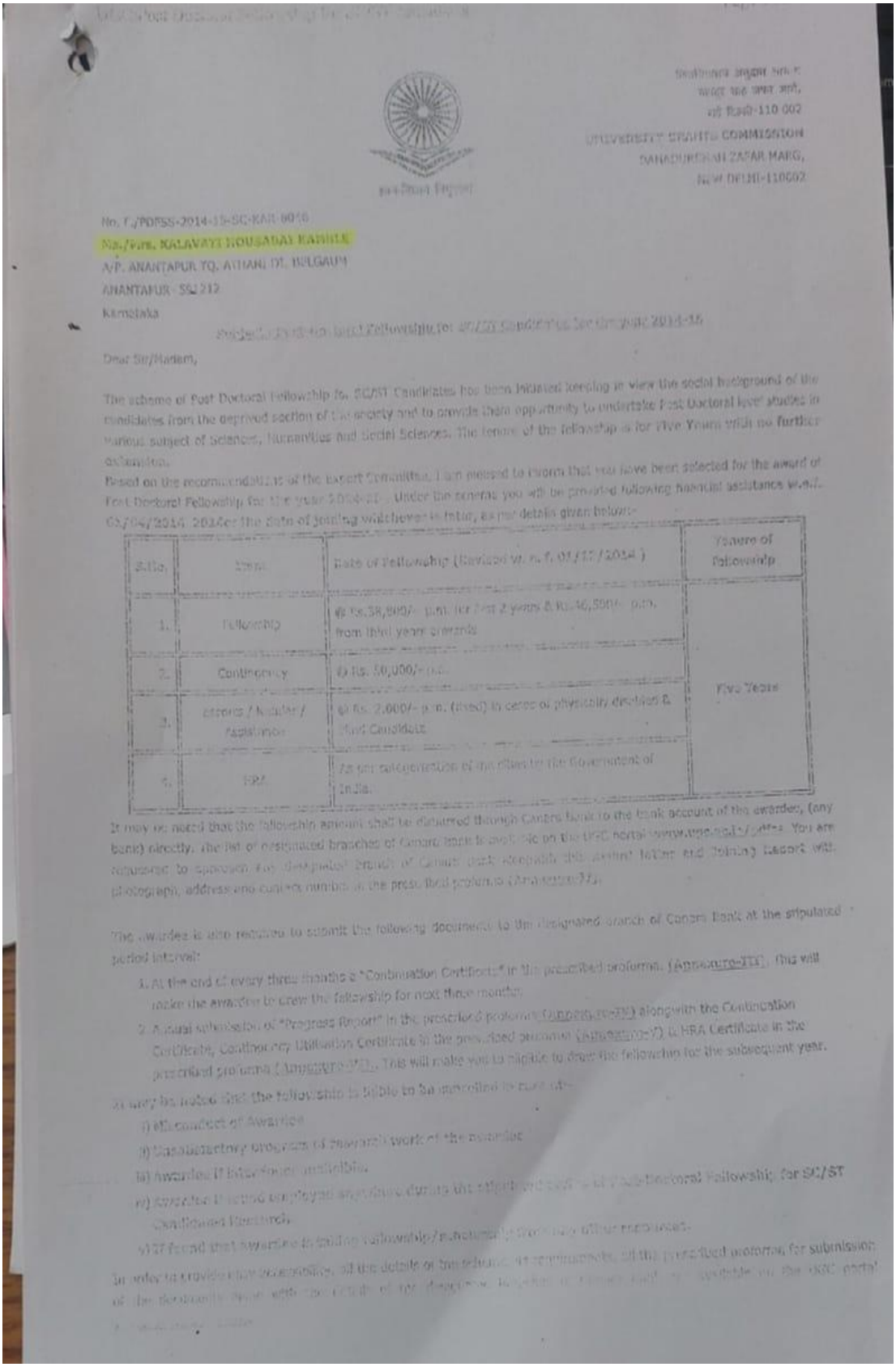
AWARD LETTER



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Mr./Mrs. KALAVATI HOUSADAI KAMBLE
A/P. ANANTAPUR TQ. ATHANI DT. BELGAUM
ANANTAPUR - 591 313
Karnataka

Subject: Award of Post Doctoral Fellowship for SC/ST Candidates for the year 2014-15

Dear Sir/Madam,

The scheme of Post Doctoral Fellowship for SC/ST Candidates has been initiated keeping in view the social background of the candidates from the deprived section of the society and to provide them opportunity to undertake Post Doctoral level studies in various subject of Science, Humanities and Social Sciences. The tenure of the fellowship is for Five Years with no further extension.

Based on the recommendations of the Expert Committee, I am pleased to inform that you have been selected for the award of Post Doctoral Fellowship for the year 2014-15. Under the scheme you will be provided following financial assistance w.e.f. 03/04/2014 2015or the date of joining whichever is later, as per details given below:-

S.No.	Item	Rate of Fellowship (Revised w. e. f. 01/12/2014)	Tenure of Fellowship
1.	Fellowship	@ Rs.38,000/- p.m. for first 2 years & Rs.40,500/- p.m. from third year onwards	Five Years
2.	Contingency	@ Rs. 50,000/- p.a.	
3.	Arrears / Annual / Replacement	@ Rs. 2,000/- p.m. (fixed) in case of physically disabled SC/ST Candidate	
4.	HRA	As per categorization of the cities by the Government of India.	

It may be noted that the fellowship amount shall be disbursed through Canara Bank to the bank account of the awardee, (any bank) directly. The list of designated branches of Canara Bank is available on the UGC portal www.ugc.ac.in/pdfss. You are requested to approach any designated branch of Canara Bank alongwith this award letter and Joining Report with photograph, address and contact number in the prescribed proforma (Annexure-II).

The awardee is also required to submit the following documents to the designated branch of Canara Bank at the stipulated period interval:

1. At the end of every three months a "Continuation Certificate" in the prescribed proforma. (Annexure-III). This will make the awardee to draw the fellowship for next three months.
2. Annual submission of "Progress Report" in the prescribed proforma (Annexure-IV) alongwith the Continuation Certificate, Contingency Utilization Certificate in the prescribed proforma (Annexure-V) & HRA Certificate in the prescribed proforma (Annexure-VI). This will make you to eligible to draw the fellowship for the subsequent year.

It may be noted that the fellowship is liable to be cancelled in case of:-

i) Misconduct of Awardee
ii) Unsatisfactory progress of research work of the awardee
iii) Awardee if found ineligible.
iv) Awardee if getting employed anywhere during the tenure of Post Doctoral Fellowship for SC/ST Candidates Reserved.
v) If found that awardee is availing fellowship/assistantship from any other source.

In order to provide easy accessibility of the details of the fellowship, all the prescribed proforma for submission of the documents have been made available on the UGC portal

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Prof. P.G.Tadasad
(I/C) Librarian
Mobile: 08352/229012
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Certificate of Anti-Plagiarism

This is to certify that the P.D.F. Report entitled **"The Impact Study on Total Sanitation Campaign in Vijayapura District",** submitted for the award of Post Doctoral Fellow in Social Work by **Dr.Kalavati H Kamble** under the mentorship of **Prof. S A Kazi$_{(Rtd)}$,** Research mentor, Dept. of Social Work, KSAWU Vijayapura, has been examined using URKUND Software. Eight percentage (8%) of plagiarism is reported. Hence, it is qualified for submission of P.D.F. Report as per the KSAWUV plagiarism Policy.

Research Mentor
Prof. S A Kazi,
Professor$_{(Rtd)}$,
Dept.of Social Work,
KSAWU Vijayapura.

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